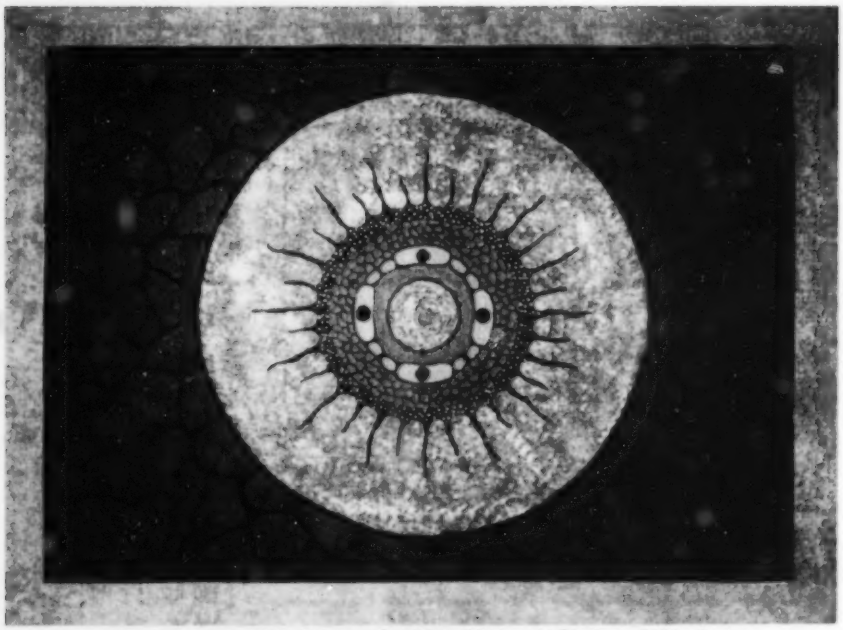
"It's Our Responsibility..."

Aboriginal Cancer Care Needs Assessment – Annotated Bibliography



"The Four Medicines" © 2001 (Michael "Skybear" Wesley)

Aboriginal Cancer Care Unit

Cancer Care Ontario

November 2002

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Cover: The Four Medicines Copyright © 2001 Michael "Skybear" Wesley

The Four Medicines – The circle represents life, no beginning and no ending. We keep moving and growing. The four people within the circle represent the four sacred medicines used in ceremonies: Tobacco, Sweetgrass, Sage and Cedar. The medicines are used for prayers and cleansings. The fire in the centre is the Sacred Fire. The fire is kept burning for the duration of the sacred ceremony.

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ONTARIO

Association of Iroquois and Allied Indians (AIAI)
Healing Bridges – Cancer Care Concerns. Video (1996)
Association of Iroquois and Allied Indians
387 Princess Ave., London, Ontario N6B 2A7
Phone: (519) 434-2761 Fax: (519) 679-1653

Cancer survivors, family members, and Iroquois leaders emphasize the need for people to overcome the fear and ignorance surrounding cancer and modern medical facilities. Using their own experiences with loved ones, they detail how early diagnosis is crucial. They encourage people to become aware of the symptoms for uterine, breast, testicular, and prostate cancers. Each provides input on ways to live a healthy lifestyle, ensuring good clean food and water, and avoiding tobacco abuse, poor diet, UV light, pollution, radioactive fallout, chemicals, contamination, and occupational hazards.

Ways to find out about cancer, traditional healing and the physicians' work surrounding cancer are described. The speakers encourage people to ask a lot of questions, and not to be afraid of the answers. Traditional healer Jan Longboat describes how "Eating with Spirit," rest, exercise, elimination as a cleansing, and proper breathing can improve one's health. She comments on how many Native people are now looking towards natural medicines, and the fact that we need to learn their proper uses. Innovations in Aboriginal health programs are briefly described.

Cancer Care Ontario
Aboriginal Cancer Care Slide Presentation (2000)
Aboriginal Cancer Care Unit, Cancer Care Ontario. Phone: (416) 971-9800

Slides outlining a presentation on the ACCU are opened with key ideas from the Royal Commission on Aboriginal Peoples Report (1996). This presentation explains the political background to Aboriginal organizations in Ontario both on and off reserve, and provides demographics for the Aboriginal/Metis population. Statistics Canada figures for age/population growth are provided, along with facts gathered from the Ontario First Nations Health Study, 1998, and key points from Cancer Care Ontario findings relating to Aboriginal people. The presentation explains the evolution of the Aboriginal Cancer Care Unit, which was established in 2000, and its origins via the Joint Ontario Aboriginal Cancer Care (JOACC) committee. The vision, role, goals, guidance, member organizations of the JOACC, organizational structure, and major initiatives are outlined. A description of the Aboriginal Cancer Care Needs Assessment, its qualitative approach, overall goals, objectives, management plan and methodology of the project are outlined.

Cancer Care Ontario
Accessing Hard to Reach Women.
Ontario Breast Screening Program (OBSP) Northeastern Ontario (1992)
Phone: 1-800-668-9304 www.cancercare.on.ca/obsp

The OBSP attempted to reach women of different cultures on Manitoulin Island (where the majority of women are of Ojibway and Cree descent) through presentations, involvement with the Sudbury and District Health Unit and the Canadian Cancer Society, and educational sessions with community representatives and medical professionals. As a result, busloads of women from the island attended the breast-screening clinic in 1992, and interest began to grow among First Nations women of Wikwemikong, Sheguindah, West Bay and Sucker Creek. Recruitment initiatives continued.

Cancer Care Ontario
Breakthrough Project - Hard to Reach.
Ontario Breast Screening Program (OBSP) (1992) Northwestern Ontario
Phone: 1-800-668-9304 www.cancercare.on.ca/obsp

The OBSP attempted to reach some 1,400 Northwestern Ontario women from 54 First Nations by announcing mobile breast screening services and offering information sessions to area nurses, First Nations (via Community Heath Representatives), Friendship Centres and Aboriginal women's groups, and using radio and T. V. announcements. Interest in the program was growing slowly at time of printing.

Chaudhry, Munaza Rubee
Cancer Incidence, Mortality and Survival Among Status Indians of Ontario, 1968-1991. M. Sc. Thesis. University of Toronto (1998)
University of Toronto, Department of Public Health Sciences, McMurrich Bldg. Rm. 108
Phone: (416) 978-8606

A description of cancer incidence, mortality and survival among Status Indians of Ontario is provided to compare findings with that of the general population. Records from the Indian Registry, the Ontario Cancer Registry, the Manitoba Cancer Registry, and the All Cause Mortality File for Ontario were linked. Significantly lower mortality rates among Status Indians were noted, while incidence and mortality rates for many sites increased over time. In comparison to the general population of Ontario they were found to experience significantly poorer survival for all sites combined and for some of the most common cancer sites. Further information on cancer risk factors and reasons for poorer survival among Status Indians is required.

Cowie, Chief Frank
Cancer. Association of Iroquois and Allied Indians. XXIV Annual General Assembly Resolution No. 9/93. (1993)
Association of Iroquois and Allied Indians, 387 Princess Ave., London Ontario N6B 2A7 Phone: (519) 434-2761 Fax: (519) 679-1653

"The AIAI supports the Health Program staff in their endeavour to continue their alliance with the Cancer Centres and to continue to collect information in this area and do whatever is necessary to further advance culturally relevant materials for our people which are holistic in manner."

Dumond, Daintry; Bates, Fran
The Development of a First Nation Cancer Self-Help Group: A Tale of Two Sisters, Lawrence Commanda Health Centre and Northeastern Ontario Regional Cancer Centre
Northeastern Ontario Regional Cancer Centre
41 Ramsey Lake Road, Sudbury, Ontario, Canada, P3E 5J1
Tel. (705)5CANCER Tel. (705) 522-6237 Fax. (705) 523-7328
Email: information@neorcc.on.ca

This presentation was transcribed from the International Conference on Cancer Nursing. It describes two nurses' efforts to enrich the quality of life for cancer patients and their families. The introduction provides background statements and trends with citations from Health and Welfare Canada before the speaker moves into the unique cultural and geographic needs of First Nations cancer clients. In Nipissing First Nation, a small, urban Ojibway community of 650, cancer had become an 'epidemic' in 1994-5. Initiatives included needs identification, service access and the development of a support group based on the seven teachings. .

Gane Yohs Community Health Centre
Women's Wellness Clinics in an Aboriginal Community. (Spring 2000)
Six Nations of the Grand River Regional Office Phone: (519) 445-2201

The Six Nations of the Grand River Sexual Health Program developed a proposal to provide clinics for sexually active women living in the community. The proposal includes breast and cervical screening services at Six Nations, facts on cervical cancer, sexually transmitted diseases, screening participation thus far, and a 'Wellness Prescription' flow chart.

Forms to document physical examinations, health questionnaires, and charts presenting community response to the clinics by year are included. The project evaluation, description of services, and supplementary articles are included. Unpublished, this information is for community use only.

Health Canada
Inventory of Cancer Care Activities and Programs Targeted to Aboriginal People in Canada. (2000)
Medical Services Branch, Health Canada
c/o Za-geh-doh win Information Clearinghouse, P.O. Box 40, Naughton, ON P0M 2M0
Phone: (705) 692-0420 Toll Free: 1-800-669-2538

This inventory documents activities and programs, describing delivery and content, for agencies that address cancer among Canada's Aboriginal people. The information, organized by region, was gathered at the request of the Joint Ontario Aboriginal Cancer Care committee to initiate a cancer care program for Aboriginal people in Ontario.

Organizations were contacted, and their services were categorized into: prevention, education, communication, early detection, treatment, supportive care, and research. Descriptions of the findings are presented in point form. Most responding agencies serve the general public, and a few have expanded programs specifically to address the Aboriginal population. Many focus on prevention and early detection of breast and cervical cancers, but very few are geared to service male clientele.

Jim Hyder Productions
Circle of Hope – A Journey of Survival. (Video)
Ontario Breast Screening Program, Cancer Care Ontario Phone: 1-800-668-9304
www.cancercare.on.ca/obsp

Aboriginal cancer survivors Elaine Fenton, Brenda Lychowyd, and Tilleyea Nothing, share their stories about overcoming cancer. Each describes their own unique challenges associated with cancers of the breast and lymph nodes. They touch on implications for the family and community, cancer as a catalyst, the learning experience, and finding information, support, and hope. Each received the gift, not about cancer, but about herself.

"There's always hope, no matter what happens in life. My experience has given me the courage and an understanding of where my health comes from…and I came to believe that there is a Creator."

Their messages include: that Aboriginal women shouldn't think that they can't get cancer; the importance of having a positive outlook, awareness and prevention via self-examination and annual medical examinations, with mammograms after a certain age; open communication between mothers and daughters; paying attention to the balance of physical, mental, spiritual and emotional health; and persistence in seeking answers, especially when in doubt of a benign diagnosis. The video closes with instructions and demonstrations for various methods of breast self-examination.

Joint Ontario Treatment and Research Foundation - Aboriginal Committee on Cancer Care
New Beginnings – Planning Cancer Care for Aboriginal Peoples. Report (Mar 1997)
Cancer Care Ontario Phone: (416) 971-9800

This report is the "structure and strategy" product of a partnership formed in recognition that the traditional western methods of delivering health care services do not reach the Aboriginal population to the same extent as the general population. It outlines the guiding principles and recommendations to support future cancer care initiatives developed to reach, educate and support the Aboriginal community. The body describes the approach, accomplishments to date, communication plans, responsibilities for implementation of new activities, leadership roles and the process for monitoring and evaluation.

A holistic perspective of (physical, mental, emotional and spiritual) healing and wellness, and the concept that individual, family and community are inseparable are fundamental to the Aboriginal cancer care strategies which have evolved through this initiative. The report describes how community involvement will be achieved through an integration of varying forms and levels of support, leadership and action. The plans include approaches to cultural sensitivity, communication, research and funding. Options for alternative structures are provided in flow chart form in the Appendix.

Note: This report has been summarized for various articles and was presented to the Ontario Chiefs' Special Assembly in March 1977.

Lewis, Clare
Investigation into the Ministry of Health and Long-term Care's Funding for Breast and Prostate Cancer Patients who must Travel for Radiation Treatment.
Ombudsman's Conclusions and Recommendations Pursuant to Section 21 of the *Ombudsman's Act* (May 31 2001)
Ombudsman Ontario, 125 Queen's Park, Toronto, Ontario M5S 2C7
Phone: (416) 586-3300 Toll Free: 1-800-263-1830 www.ombudsman.on.ca

This report describes an investigation into complaints from Northern cancer patients, who alleged that cancer patients with either breast or prostate cancer who live in the north are treated inequitably under two travel assistance programs - the Northern Health Travel Grant (NHTG) and the Cancer Care Ontario Radiation Re-referral Program (CCORRP).

The investigation compared Ontario policies with those of other provinces, and conducted interviews with the Deputy Minister and staff of Health and Long Term Care, with CCO, and with the Canadian Cancer Society. This Ministry's response and 1999-2000 fiscal year data about each program are provided. Issues of geography, mode of transportation, options, convenience, time, emotional stress, and eligibility for accommodation are aligned.

The Ombudsman's report was limited in scope and maintains that there is inequity in the funding programs.

Lightfoot, Nancy E; Fehringer, Gordon M; Bissett, Randy J; McChesney, D. Clare; White, Jason J

Cancer Incidence and Mortality Trends in Northeastern Ontario.

Canadian Journal of Public Health (Jan-Feb 1996) 17-24

The Northeastern Ontario Regional Cancer Centre produced this epidemiological examination of cancer incidence and mortality trends over two decades between 1971 and 1990. While the report lists Aboriginal groups as one among many ethnic populations residing in the region, no specific findings are presented by ethnic affiliation. In the discussion on possible sources for increased risk of cervical cancer, significantly higher rates among Native American and British Columbia Indian women are mentioned.

Lougheed, Gerry, M. Jr.

Provincial Funding for Cancer Patients is Discriminatory Towards Northerners,

Manitoulin Expositor. Letter to the Editor (Jun 7 2000) P.O. Box 369, Little Current, ON P0P 1K0

Phone 705-368-2744 Fax: 705-368-3822 Email: expositor@etown.net

Penned by the founder of the Northern Cancer Research Foundation in Sudbury, and its later satellite radiation facility in Sault Ste. Marie, this letter addresses Ontario government policy on travel. While Southern cancer patients receive full compensation for travel to receive radiation treatment, Northerners receive only a portion of the expenses. It encourages concerned citizens to write to the Premier requesting equity and a more practical policy for the Northern Health Travel Grants.

Marrett, Loraine D

Cancer Incidence in Ontario Status Indians, 1968-1991: Summary Results of a Comparative Study.

Division of Preventive Oncology, Cancer Care Ontario (Apr 1998)

Phone: (416) 971-9800

This report presents comparative findings for rates of cancer incidence and mortality in Ontario Status Indians using three distinct time periods between 1968 and 1991. The findings are paralleled with similar studies conducted among the general population in Ontario. The demographics, observations, trends and concluding suggestions for preventive activities are determined by using graphs and tables and text. They demonstrate where Aboriginal populations have generally lower rates than the general population and where certain types of cancer are more common among Aboriginal people. It concludes with recommendations for focus work in the areas of:

- improving delivery of Pap screening services to Aboriginal women (to curb cervical cancer rates);
- looking at ways to deter people (particularly youth) from taking up smoking; and
- smoking cessation (to address the rising ratios of lung cancer incidence in Status Indians).

Other areas of concern include addressing how dietary changes from traditional foods to the Western diet have led to substantial increases in colon and rectum cancer, as well as kidney and gall bladder cancers among Aboriginal women.

"An overview of other Canadian studies indicates that Aboriginal populations have lower rates of all cancers combined and most of the common cancers (breast, lung, prostate, colorectal), compared to the rest of the population. However, some cancers seem to be more common in Aboriginal populations: cancers of the cervix, gallbladder and kidney are those most frequently so reported."

"As with all Ontario women, the four most common forms of cancers in Status Indian women are breast, cervix, colon, rectum and lung…As with all Ontario men, in Indian Status men, lung, prostate and colon, and rectum cancers are the most common."

Marrett, Loraine D; Swift, M. B; Reynolds, D. L; Clarke, E. A
Geographic Distribution of Cancer in Ontario. Vol. 1: Atlas of Cancer Mortality 1976-1985.
Ontario Cancer Treatment and Research Foundation (May 1991)
[Now Cancer Care Ontario, Division of Preventive Oncology] Phone: (416) 971-9800

In a description of Ontario's people, their history and ethnic distribution, Indian and Inuit are described as comprising just over 1% of Ontario's population. The introduction includes a short historical account on how colonization led to the transmission of diseases from colonists to the Ontario's original inhabitants, who lacked immunity. Immigration patterns and statistics are provided. In the maps that demonstrate geographic distribution, the Aboriginal population is considered one of five major ethnic groups in Ontario due to their unique pattern of cancer. Among other ethnic groups in the province, percentages on the proportion of Aboroginal by census distribution per region/district are provided.

Mutch, Cindy
New Initiatives in Cancer Care for Aboriginal Peoples. Hospital News - Aboriginal Health (Aug 1998)
23 Apex Rd, Toronto Ontario, M6A 2V6
Phone: (416) 781-5516 Email: hospitalnews@sympatico.ca

This article explains how the strategy for improving the delivery of cancer care services to Aboriginal peoples was developed through collaboration between representatives from provincial Aboriginal organizations and Cancer Care Ontario, who formed the Joint Ontario Aboriginal Committee on Cancer Care (JOACC) in 1996. It describes the membership, mandate, goals envisioned and key recommendations developed to date.

Northern Health Information Partnership
Northern Ontario Cancer Profile Report. (Dec 2000)
Northern Health Information Partnership
199 Larch Street, Suite 1104, Sudbury, Ontario P3E 5P9
Phone: (705) 669-1999 Fax: (705) 669-0999 www.nhip.org/cancer/

Member agencies collaborated to produce this comprehensive health status report on cancer in the north, where Aboriginal peoples are among one of three distinct populations having decreased opportunities for optimal well-being. Language and culture are considered when planning for effective cancer prevention and treatment programs for Northern Ontario.

With a large percentage of Ontario's Aboriginal population living in the north, unique issues pertaining to this ethnic group are considered. Though reports indicate lower rates of cancer of all sites combined than the general population, there are concerns about higher rates of kidney cancer in Aboriginal men, and cancers of the gallbladder, cervix and kidney among Aboriginal women. Brief mention of two studies examining frequency of cancer in Status Indians is made and statistics are provided.

Northwestern Ontario Regional Cancer Centre
A Comprehensive Cancer Control Program for the Sioux Lookout Zone and the Town of Sioux Lookout and Area. (Apr 1997)
Community Cancer Care Program, Northwestern Ontario Regional Cancer Centre
290 Munro Street, Thunder Bay, Ontario P7A 7T1
Phone: 1-807-343-1610 or Toll Free: 1-877-696-7223

This cancer control program for the Sioux Lookout Zone and Sioux Lookout area was proposed to address a population at increasing risk of developing cancer with aging. Components of the plan include primary prevention, early detection, clinical treatment, rehabilitation and palliation. Efforts at reducing incidence and improving cancer survival include modification of smoking behaviors, diet, alcohol consumption and sexual activity, as well as improving participation in breast and cervical screening.

A number of agencies collaborated to plan a culturally appropriate approach to dissemination of information, creation of a registry and surveillance system, guidelines on screening and hospital services, access to specialized services in Thunder Bay, and to look at ways to improve home care for cancer patients. Tailored to the unique cultural, geographic, and medical needs of the area, background information about cancer distribution and concerns over preventable causes are presented. Proven inadequacies in the present system are described before the proposed program objectives are outlined. The plan includes consideration for program management and financing, scheduled implementation, and evaluation. Attached are the Advisory Committee members, case profiles, proposed practical operation of the program (flow chart), job descriptions, and a list of references.

Ontario Cancer Treatment and Research Foundation
Aboriginal Committee Formed. Makes Recommendations for Improvements.
What's News at PROVINCIAL (Jan 16 1997). Newsletter Article
Ontario Cancer Treatment and Research Foundation (Now Cancer Care Ontario)
Phone: (416) 971-9800

This article introduces the formation of the OCTRF Aboriginal Committee on Cancer, outlining membership, the initial visioning exercise, recommendations and initial recommendations.

Ontario Cancer Treatment and Research Foundation (OCTRF)
Current Cancer Care Initiatives in the Aboriginal Community. (Oct 1996)
Ontario Cancer Treatment and Research Foundation (Now Cancer Care Ontario)
Phone: (416) 971-9800

This report opens by explaining the role and services of the OCTRF (now Cancer Care Ontario), its eight Regional Cancer Centres and the Provincial office. It summarizes how Early Detection and Screening for Cervical Cancer, the Ontario Breast Screening Program (OBSP), Education Services, Treatment Initiatives, Supportive Care, and research activities are creating opportunities to reach people in and from Aboriginal communities across Ontario.

Highlighted are: the Kingston OBSP services for James Bay coastal communities, the mobile screening unit used in Northwestern Ontario; the production (involving a number of Aboriginal women) of a video on breast health (and plans for a second one with the Canadian Breast Cancer foundation); a pilot project on Manitoulin Island involving presentations from health practitioners, translation of information and transportation; workshops on cancer related issues in Timmins; multidisciplinary and cultural sensitivity education for health care providers and palliative care initiatives for Aboriginal people in Sudbury, Manitoulin, and Algoma region; educational conferences, workshops, health fairs in the London area and the production of a video by the AIAI; outreach initiatives and Chemotherapy Clinics in Manitoulin Island; the Cancer Self Help Group in Nipissing First Nation; and the report, 'Cancer Incidence in Ontario Status Indians, 1968-1991', written by Loraine Marratt, Division of Preventive Oncology, (cited in this bibliography).

Opie, Marge; Hakenberg, Joanna
Understanding Health Beliefs that May Influence Aboriginal Women's Decision to Attend a Breast Screening Clinic.
Ontario Breast Screening Program, Cancer Care Ontario
Phone: 1-800-668-9304 www.cancercare.on.ca/obsp

This is an outline of the Ontario Breast Screening Program's approach to the promotion of breast screening in the Aboriginal population. In their study, they used cultural assessment through interviews and the nursing role, and examined health practices and beliefs about communication, orientation, family relationships, health beliefs, education, and religion. They found little research from Canada on their topic, and inaccuracy in the

incidence and mortality rates concerning cancer and Aboriginal women, determining detection as the major factor influencing survival. Recommendations therefore focus on breast health education, visits to the Ontario Breast Screening Centre, and staff education.

Public Health Reports
Mortality Pattern Of Isolated Indians in Northwestern Ontario: A 10-Year Review. Public Health Reports 98:5 (Sep-Oct 1983) 467-475

This review compares mortality rates from the Cree-Ojibway population of the Sioux Lookout Zone with rates from the Canadian population from 1972-81. A map illustrates the population distribution of 8,000 Indians living in 25 remote communities, with 2,000 more scattered in the surrounding area. Tables and graphs support the findings on population, mortality, and crude mortality rates according to age distribution and cause of death. Similar patterns have emerged among other Indian groups in Canada and the US, especially concerning mortality from accidents and violence. Among other studies, this report attributes the phenomenon to social disintegration resulting from increased contact with Euro-Canadian society and social change among the Indians.

Concerning cancer, a table on the cause of death attributes 62 deaths, 9.3% of the deaths in the Sioux Lookout Zone during the period under study, to malignant neoplasms, ranking them fourth most prominent cause of death. For Canada in general during that period, the percentage was 21.4, ranking them 2nd most prominent cause of death.

Wesley, Chief Wilfred; Morris, Donny
Approval of Oncology Proposal for Sioux Lookout Zone. Sioux Lookout Zone Chiefs Meeting Resolution. Sioux Lookout, ON (Feb 27 1997)
Box 1800, 54 Queen St., Sioux Lookout, Ontario, P8T 1B8
Phone: (807) 737-4011 Toll Free: 1-800-842-0681

Sioux Lookout Zone Chiefs resolved that "The Chiefs approve the submission of the Sioux Lookout Oncology Proposal to the Ontario Provincial Government;" and that "Sioux Lookout First Nations Health Authority are directed to monitor the project and report annually to the Chiefs on the program's development."

Young, T. Kue
Self-Perceived and Clinically Assessed Health Status of Indians in Northwestern Ontario: Analysis of a Health Survey. Canadian Journal of Public Health 73 (Jul/Aug 1982) 272-277

This paper reports the results of a community health survey conducted in 1973-74 in the Sioux Lookout Zone, where Medical Services Branch, Department of National Health and Welfare, provided comprehensive primary care and hospital services to about 10,000 Status Indians in scattered, remote communities in northwestern Ontario. Through interview, clinical examination and anthropometrical and laboratory tests, prevalence rates were established for certain health problems with the discrepancy between perceived and clinically determined health status highlighted.

Participants reported on self-perceived morbidity, bed disabilities, injuries, self-rating of health, symptoms and complaints, tobacco and alcohol use, abnormal clinical findings (arranged by body system), dental problems, visual defects, hearing impairment, respiratory conditions and skin conditions. Tables illustrating the findings are provided, and these are compared with the clinical results.

The summary classifies findings into four categories; healthy, minor deviations, deviations requiring consultation, and deviations already under treatment. These are placed in the context of gender and age. Certain key indicators, e.g., dental, respiratory and skin conditions, support existing records from the Zone hospital and ambulatory care providers. The results, some of which are correlated with changes in social conditions, will benefit health planning and service delivery.

The section on tobacco and alcohol revealed an alarming rate of smokers among the 15-19 age group. In fact, 48% of the people aged 15 and over were smokers. This figure was 10% higher than the percentage of smokers in the general Canadian population in 1974. "If the trend continues, an increased incidence of smoking-related diseases in a few decades will likely result."

Young, T. Kue; Frank, John W
Cancer Surveillance in a Remote Indian Population in Northwestern Ontario.
American Journal of Public Health 73:5 (May 1983) 515-20

This study has served as a baseline on cancer incidence and mortality for epidemiologists, health planners and service providers concerned with Aboriginal people. Conducted in the Sioux Lookout Zone of Northwestern Ontario, 1972-81, among a population of roughly 10,000 Cree and Ojibway, all known cases of malignant neoplasms were collected in a cancer registry. Information was gathered from recorded Status Indian deaths, patients discharged from the hospital, logged clinical encounters, and hospital correspondence/ reports.

Information for the Zone was paralleled with national cancer statistics (Statistics Canada) to compare findings with incidence and mortality among the general population. Standardized mortality rates (SMR) and standard incidence rates (SIR) were determined following a Poisson distribution. Tables illustrate the age/sex structure of the Status Indian population in the Zone, cancer deaths with age/sex distribution and relative risks, comparative ranking among specific cancer sites, contribution of cancer to general mortality, and comparative ranking and age standardized incidence ratios of selected primary cancer sites.

Compared to Canadian men in general, Status Indian men were at half the risk of developing and dying from cancer, but Status Indian women were at similar risk to women in the general population. There was a notable absence of bladder and stomach cancer among the Sioux Lookout Zone Indians. However, both sexes had an incidence and mortality rate of kidney cancer 7 to 13 times higher than that of the general Canadian population. There was a comparative concern that Indian females in the Zone were at

almost 9 times the risk of developing gallbladder cancer than Canadian women. Low-risk sites among Indians included lung in men, breast in women, and skin in both sexes. In the Sioux Lookout Zone, over half of the cancer death cases were patients over 65 of age, though among females, highest relative risk was among females in the 35-44 age group.

Rationale and context for the findings are presented in the discussion, including related studies among Aboriginal populations, dietary and environmental considerations, smoking prevalence, and exposure to lifestyle and environmental change. Future studies, continuing surveillance, and planning for services are recommended.

OTHER PROVINCES AND TERRITORIES

Band, Pierre R; Gallagher, Richard P; Threlfall, William J; Hislop, Thomas G; Deschamps, Michele; Smith, John
Rate of Death from Cervical Cancer Among Native Indian Women in British Columbia. Canadian Medical Association Journal 147:12 (1992) 1802-4

This study compares cervical cancer death rates among Native and non-Native women in BC using data from 1953-84. Age-standardized death rates and relative rates were significantly higher among Native women over the 30-year period. Results are discussed and presented in a table, showing the time periods monitored, population, and relative rate for Native to Non-Native ratio of age-standardized death rates.

Despite BC's excellent cervical cancer screening program, which has reduced the overall death rate from cervical cancer by 75% since 1973, rates among Native women remain excessive. Dramatic differences may be attributed to exposure to risk factors, or to cognitive, emotional, and socioeconomic barriers to participation in the provincial cervical cytology screening program. Efforts to improve Native participation continue.

Birdsell, Judy M; Schwann, Monica E; Tremblay, Rick
Reaching Native Groups in the Northwest Territories: A Report of the Joint Project Between Government and a Voluntary Agency. Canadian Journal of Public Health (Sep-Oct 1992) 335-6

Public education on cancer became the focus of this 1990 project delivered by the Departments of Health and Education, (Government of the Northwest Territories) and the Canadian Cancer Society (CCS). In answer to public requests for information, the aim was cancer prevention and early detection. The CCS worked with existing community agencies to create a basic understanding of cancer in this challenging environment.

Illustrated charts were developed, leaving the specific body parts blank so users could label the appropriate term in the local language or dialect. They were sent to Community Health Representatives (CHR), health centres, schools and a Native organization. Six months later, follow-up questionnaires generated feedback on reception, frequency of use, audience and usefulness. Evaluation from the users was extremely positive, and kindergarten to high school learners benefited.

Calam, Betty; Bass, M; Deagle, George
Pap Smear Screening Rates – Coverage on the Southern Queen Charlotte Islands. Candian Family Physician 38 (May 1992) 1103-8

Adequacy of cervical screening was measured in women of the Queen Charlotte Islands, under the hypothesis that Haida, and older more geographically isolated women would be under-represented. Local access to a 3-physician group practice, hospital, clinics, and referral centres is described. Since 1985, a manual Pap recall system has been in place, but there is no computerized prompt for overdue or unscreened women.

The cross-sectional study of 196 clients revealed that significantly fewer Haida women, particularly those aged 60+, had adequate cervical screening in comparison to non-Aboriginal. Women most likely to be overdue for screening were Aboriginal.

The need for computerization to improve identification of women either unscreened or overdue for screening and allow recall for patients at risk is recommended. Possible factors for lower rates of participation are discussed. The study proposes that it would be useful to do qualitative research to elucidate cultural factors and aid in planning for screening programs to prevent unnecessary deaths across all women at risk in the community

Calam, Betty; Norgrove, Leah; Brown, Diane; Wilson, Mary Ann
Pap Screening Clinics With Native Women in Skidegate, Haida Gwaii: Need for Innovation. Canadian Family Physician 45 (Feb 1999) 355-60

Ways to improve screening practices were examined by health practitioners. Given the lack of participation in Pap screening by Native women of Haida Gwaii, particularly among women over 40, and significantly higher mortality rates for cervical cancer in this population, this research was framed with existing figures and study results that call attention to high risk.

The barriers to regular Pap screening were outlined, and suggestions for developing culturally appropriate health initiatives were considered. A background on the location, its inhabitants, access to medical services, and practitioners available preludes a description of how the community was consulted via Native Community Health Representatives.

Informal interviews were conducted among almost half of the Native women over 40 living on the Skidegate Reserve, to ask about their opinions on previous research and advice on improving Pap screening services. Eight suggestions emerged, including: holding clinics at community health centre; formal invitation to clinics; female practitioners; privacy; use of cotton drapes and gowns; minimizing waiting times; comfortable socialization; and provision of refreshments.

Local project endorsement, identification of women eligible for screening, and the community outreach process for the study are described. Clinics were held using the suggestions, and an exit interview was used to provide feedback. Educational materials and a video were included.

Screening status and participation are described and percentages are presented in charts and text. Feedback was positive, with no dissatisfaction expressed. The supplementary information was helpful, and cultural sensitivity was considered central to the project's success. Project limitations and positive outcomes are described, with community consultation considered its key to success.

Clarke, Heather F; Joseph, Rhea; Deschamps, Michele; Hislop, T. Gregory; Band, Pierre R; Atleo, Richard
Reducing Cervical Cancer Among First Nations Women. The Canadian Nurse (no issue number available)

The Pap smear research project was conducted in 1991-2 among First Nations women in BC who live both on and off reserve. Findings indicate that Aboriginal women in BC have a four to six times higher mortality rate from cervical cancer than do women in the general population. This article attributes the First Nations women's lack of participation in provincial Cervical Cytology Screening Program (CSSP) to the need for more culturally suitable health services, greater awareness among First Nations women, affordable access, and better communication about Pap smear testing. It cites examples from the U. S., where recent attempts to incorporate traditional learning approaches, such as culturally appropriate brochures, storytelling and talking circles as ways to reach the Aboriginal population. It also addresses issues of modesty and privacy, leading into positive, specific objectives, which can be implemented to improve participation in screening.

The research component describes the methodology, participants and procedures used to ensure a culturally appropriate approach to the issues. Presentations on the findings were made to the wider medical community (BC, nationally, and internationally) and Aboriginal organizations, as well as in printed articles for First Nations newspapers. All First Nations that participated received a summary report. Three major themes emerged from the data: knowledge of, reaction to, and preparation for the Pap smear test (PST); inhibiting and facilitating factors for having a PST; and health practices and supports. Each is detailed, providing explanations for the gaps.

The demonstration component offers three major areas where changes could improve participation in the CCSP: knowledge, environment and health care providers. Under knowledge, seven recommendations were put forward from the off-reserve participants and illustrated by an Aboriginal artist. The work portrays the building of relationships to connect urban Aboriginal life with life on reserve. The image was used in a poster, information card and follow-up pamphlet to improve awareness. The project also created focus groups for women to discuss health care issues surrounding women's health and cervical cancer. Participants identified seven needs pertaining to environment, which could be used to improve services for First Nations women.

In Vancouver, these needs were put into practice by creating a monthly, off-reserve clinic with a staff of three. Six needs concerning heath care providers were identified. These were also acted upon when the monthly clinic began.

Evaluation and outcomes for the project are summarized in terms of methodology. Materials created through the project met all the criteria initially identified and were considered successful. Cultural suitability remained prevalent, followed by accuracy and readability. Information was verified and pilot tested and is now available through the

Canadian Cancer Society (CCS) and the BC Cancer Agency's CCSP. The temporary clinic activities for intervention were taken over by the Vancouver Native Health Society.

Follow-up from the project, the province now has a First Nations PST program, through which nurses are trained to hold Pap smear clinics. Long-term evaluation is pending, and future directions are cited in the report. The study, and the use of culturally specific print materials are recommended for nurses who may interact with First Nations women.

Deschamps, Michele; Band, Pierre R; Hislop, T. Gregory; Clarke, Heather F; Smith, John M; To Yee Ng, Vincent; Math, M.
Barriers to Cervical Cytology Screening in Native Women in British Columbia.
CRC Press, Inc. Cancer Detection and Prevention 16:5/6 (1992) 337-9

Despite the 75% decrease in both incidence of and mortality from invasive squamous cervical carcinoma since the implementation of the BC Cervical Cytology Screening (CCSP) began in 1955, the cervical cancer mortality rate remained six times higher in the Native population than the general population. This study investigated the reasons underlying this difference and explored ways to implement appropriate solutions. Numbers of Native women participating in the CCSP were 30% lower than the provincial figures for all age groups.

Reasons for non-participation included lack of awareness, shyness, and discomfort in discussing or undergoing the procedure. Ways to address the lack of participation were discussed with practitioners, pointing to prevention on cervical and breast cancer, women's health workshops adapted to the culture, the desire to have female practitioners (not belonging to their community) perform the Pap test, and reminders that their Pap test is due. The recommendations led to a pilot Cervical Cytology Screening clinic for each community, with information sessions, educational materials and discussion times. Results and recall for annual check-ups were also proposed.

First Nations Breast Cancer Society
Echoes of the Sisters – First Nations Women: Breast Cancer. (Promotional material and video). 1996
First Nations Breast Cancer Society Phone: 1-800-875-3677 (BC)
www.fnbreastcancer.bc.ca

Health educators are informed that many First Nations women die needlessly of breast cancer due to lack of regular examination and information in this announcement of a national broadcast documentary to address the issue. The 30-minute video, poster, and resource booklet were developed for health care workers and the public, to promote awareness of breast cancer in First Nations women. Available in English, French, and Inuikutuk.

The Society registered in 1995 in BC to offer breast health education and awareness and support to newly diagnosed women. They work with other cancer organizations for educational purposes, and solicit volunteers, memberships and donations to deliver

workshops, support groups, a lodge, and public information forums. The goal is to encourage cancer awareness among First Nations women, especially via messages from breast cancer survivors. Aspects of both western and traditional medicine are discussed.

Produced by The Coyote Collective, the video features three Aboriginal breast cancer survivors describing their experiences. Dr. Charmain Kim-Sing describes what women should be looking for in monthly breast self-examination, the importance of annual examinations with a physician, regular mammograms, and healthy lifestyles. The formation and functions of the First Nations Breast Cancer Society are described, as are roles of traditional healer, radiologist, and Spiritual Elder. It includes a discussion on alternative medicines from both the traditional healer and medical doctor's perspectives, stressing that it is important for patients to feel comfortable with the medicine. Other aspects include a positive attitude (even humour), faith, support, and education.

"Cancer is not proud of who it attacks. It is not a White women's disease. Cancer is every woman's disease."

First Nations Breast Cancer Society
First Nations Women: Breast Self-Examination. (Video) 1998
First Nations Breast Cancer Society Phone: 1-800-875-3677
www.fnbreastcancer.bc.ca

This video emphasizes how breast self-examination, looking for lumps, the yearly mammogram and medical examination could save your life. Survivors discuss how they discovered their lumps, and how important it is that people get over the shyness of going to the doctor. Radiation Oncologist Dr. Charmain Kim-Sing presents her cancer work, and survivor Jacqueline Davis describes experiences of having a mastectomy, chemotherapy and breast reconstruction.

Three methods of breast self-examinations are presented: lines, wedges (bicycle), or the circle (clock), and these should commence with women in their early teens. Explanations about where and when to do examinations, and what to look for are given. The main message is "Be in charge of your health, and your breasts."

Freitag, S. C; Pim, C. P; Wideman, M
Cancer Registration and Trends in Cancer Incidence in the Northwest Territories.
Arctic Medical Research. University of Manitoba Press. Circumpolar Health 90.
Proceedings of the 8th International Congress on Circumpolar Health. Whitehorse, Yukon (May 20-25 1990)

A cancer registry for the Northwest Territories was developed in 1986 in answer to growing concern over rapid lifestyle and dietary changes of the Dene and Inuit, and arctic environmental contamination. Data from earlier registries and cancer reports by health professionals were combined to cover the period between 1970-84.

A total of 798 invasive cancer cases were recorded. The data was aggregated by anatomical site, using either 5-year intervals, or the entire study period. Results on leading cancer sites by sex, Standardized Incidence Ratios, or average annual incidence were presented using text, charts and graphs. Lung cancer rates were extremely high – almost four times the expected number. Cervical and ovarian cancers were also more prominent in the NWT. However, overall cancer incidence was not significantly different from the rest of Canada. There were 33% fewer breast cancer cases than expected.

Explanations for the fluctuations and trends are provided. Included are results on smoking from a 1986 NWT Health Promotion Survey. The cancer registry was expected to continue to enable future comparison between ethnic groups, assess trends over time, act as a source of cancer information on Native Canadians, and assist in planning and monitoring prevention programs.

Gaudette, Leslie A; Gao, Ru-Nie; Freitag, Sharon; Wideman, Miriam
Cancer Incidence by Ethnic Group in the Northwest Territories (NWT) 1969-88.
Health Reports 5:1 Statistics Canada, Cat. 82-003 (1993) 23-32

Cancer incidence among ethnic groups in the NWT was studied to determine patterns and investigate the importance of genetics, environmental and lifestyle factors in development of the disease. Of the 1,111 cases reported from 1969 to 1988 for all cancers (except non-melanoma skin cancer) 195 occurred among Status Indians, 399 among Inuit and 517 were classified as 'other.' There were 595 male cases and 516 female.

A variety of sources were used to calculate population data and ethnicity, and these are described. Expected cancers and Standard Incidence Ratios (SIR) were calculated and are presented in bar charts. In comparison to the Canadian population, high cancer rates for the Inuit and low cancer rates for Status Indians were consistent with earlier studies.

In males, lung cancer was proportionately higher among the Inuit. Rectum, prostate and colon cancers were leading sites for Indians and others. Kidney cancer occurred more frequently among Indians than the other groups. In females, lung cancer ranked first among Inuit, and high for both other groups. Breast cancer ranked first for Indians and others, but very low among the Inuit. 10-12% of all cases were cervical cancers. Details of significantly high/low SIR are elaborated.

Examining trends, Canadian Inuit females were ranked among the highest recorded for any population in the world. Tobacco use among both Inuit and Indian populations in the NWT was more than double that of Non-Natives in 1986 (contributing to the higher incidence of lung cancer). Elevated rates of cervical cancer among the Inuit are discussed. The results will be used by the NWT Department of Health to plan cancer control programs, targeting lung and cervical cancers as the focus of prevention programs.

Gillis, D. C; Irvine, J; Tan, L; Chiu, S; Liu, L; Robson, D
Cancer Incidence and Survival of Saskatchewan Northerners and Registered Indians, 1967-1986. Arctic Medical Research. University of Manitoba Press. Circumpolar Health 90. Proceedings of the 8th International Congress on Circumpolar Health. Whitehorse, Yukon (May 20-25 1990) 447-51

With cancer ranked the third leading cause of death among Indians in the province, this study set out to find out how patterns among Indians compare to those of the general population and those among Aboriginal populations elsewhere in the continent, and to look at survival after diagnosis. A twenty-year period, divided into four segments, was reported.

Cultural, linguistic and ethnic affiliation, as well as geographic factors are presented. Information was gathered from the Saskatchewan Cancer Registry, patient referrals, malignant pathology reports, death certificate notification and autopsy reports. In the registry, both registered Indians and northerners were uniquely identified. Text, tables and graphs were used to present findings on cancer distribution by cancer site, population group, age, sex, survival from all malignant neoplasms, and five year survival by age, sex and population group.

There were 535 registered cases identified during the study. Mean age at diagnosis was 55.2 (almost 10 years lower than the general Saskatchewan population, 3 years lower than other northerners). Over the 20 years, for all cancer sites, registered Indians experienced a four-fold increase in cancer age-standardized incidence, with the greatest increase during the last decade of study. Still, data supports that cancer incidence among both registered Indians and northerners is low relative to the provincial population.

Findings were consistent with other studies among Aboriginal populations. For northerners and registered Indians, poor survival rates were reported, with particular concern expressed for Indians aged 65 and over. Also noted were increases in lung, breast and cervical cancer incidence in both Indian and northern women during the last five years of study.

Changes in diet and lifestyle, alcohol and tobacco use were discussed. Poor survival rates, diagnosis at earlier ages, stage of cancer at diagnosis were observed. A wider, national study was recommended. The issues of access to equipment, diagnosis and treatment, and language barriers were all hypothesized and will act as a threshold for new research. The findings can be used in planning prevention efforts to decrease incidence and improve survival rates among remote populations.

Hildes, J. A; Schaefer, O
The Changing Picture of Neoplastic Disease in the Western and Central Canadian Arctic (1950-1980). Canadian Medical Association Journal 130 (Jan 1 1984) 25-32

An increase in overall cancer morbidity among the Inuit was documented from 1950-80. Some 104 male and 135 female cases from the western and central Canadian Arctic were

reviewed. A shift was observed from earlier prevalence of tumors of the salivary glands, kidney, and nasopharynx to more recent frequency of lung, cervical and colorectal cancers. Initially absent, there are still very few cases of breast cancer in Inuit women.

In comparison to other North Americans, Inuit display dramatically higher incidence of cancers of the esophagus, liver and ampulla of Vater, and lower incidence of cancers of the skin, prostate, pancreas and stomach. These striking differences, however, are gradually diminishing.

The role of environmental, nutritional and lifestyle factors, and the history of local acculturation are attributed to the changes. Observations about the distribution of cases by cancer site and region of patient's origin are made. Details about changes specific to cancers of the lung, cervix, nasopharynx, colon, rectum, kidney, esophagus, biliary tract, breast, skin, malignant tumours of the salivary glands, and other tumours are provided.

Hislop, T. G; Band, Pierre R.
A Persistent Spirit. Ch. 8 in: Epidemiology of Cancer in First Nations People in British Columbia. 249-259.

Incidence and mortality rates and the relative prevalence of specific cancer sites are shown to differ for First Nations males and females when compared to other BC residents in this study, which also reviews two cancer screening programs aimed at reducing cancer mortality in women.

The tables and text reveal facts about the BC Indian population, frequency distribution by place of residence and age of First Nations women, and the five most common sites for cancer mortality in First Nations people by sex, for all ages (1953-78). First Nations men had significantly reduced mortality for all cancer sites combined, with no cancer site having significantly marked trends in comparison to other BC men. First Nations women had cancer mortality rates slightly lower than BC women, but significantly higher rates of mortality due to cancer of the cervix and gallbladder. They displayed lower rates for breast cancer.

Early detection through screening is described with special reference to First Nations women, whose participation in the Cervical Cytology Screening Program (1995) and the Screening Mammography Program of British Columbia (1998) was lower than that of the general population.

Hislop, T. G; Band, P. R; Deschamps, M; Clarke, H. F; and others
Cervical Cancer Screening in Canadian Native Women-Adequacy of the Papanicolaou Smear.. Acta Cytologica 38:1 (Jan-Feb 1994) 29-32
Division of Epidemiology, Biometry and Occupational Oncology, BC Cancer Agency

As cervical cancer mortality remained high in BC Native women and the Provincial Cytology Screening Program was proven underused by Native women, this study addressed the quality of specimens obtained. Proportions of unsatisfactory smears and

those lacking endocervical cells, reflecting the sampling technique, were compared between Canadian Native and other BC women. Findings suggested that differences in the quality of cytological smears do not explain the observed discrepancy in cervical cancer mortality between Native and non-Native populations.

Hislop, Thomas Gregory; Clarke, Heather Frances; Deschamps, Michele; Joseph, Rhea; Band, Pierre Robert; Smith, John; Le, Nhu; Atleo, Richard
Cervical Cytology Screening – How can we Improve Rates among First Nations Women in Urban British Columbia? Canadian Family Physician 42 (Sep 1996) 1701-1708

This study investigated the extent of, and ways to improve the participation BC First Nations women in Pap smear screening. A sampling from 27 communities were surveyed to determine existing age-adjusted Pap smear rates. Pilot clinics were offered to three communities, which increased participation to 80% of eligible women. Another phase took place in Vancouver to reach urban First Nations women. The results compare findings from reserve residents, women living outside reserves, and the BC general population. Reasons for not having a Pap smear were gathered through interviews with individuals and in community meetings.

A Demonstration Project took place to act on the findings. Health promotion materials - a poster, art cards, and pamphlets specific to First Nations women - were distributed and evaluated. Awareness was generated via articles in First Nations news and community meetings. Though successful, women were found to prefer building a trusting relationship and having their screening done by a family physician. Implications and resources for family physicians are summarized.

Hislop, T. Gregory; Deschamps, Michele; Band, Pierre R; Smith, John M; Clarke, Heather F
Participation in the British Columbia Cervical Cytology Screening Programme by Native Indian Women. Canadian Journal of Public Health 83:5. (Sep-Oct 1992) 344-5

This paper documents participation in BC's Cervical Cytology Screening Program (CCSP) for Native women from 28 Bands in the four school districts with the highest cervical cancer mortality rates in BC. Participation rates were determined by linking the CCSP computerized personal cervical cytology screening history data files to the Band membership lists,

Recent use, "ex-use," and age-standardized participation rates were calculated. Almost 72% of age-eligible Native women were located in the CCSP registry. Just over half were recent users, and a fifth were "ex-users." Use decreased with age, leveling off for women aged 40-59. More significant numbers of recent use are noted among women from the coastal bands. Native women participated in the CCSP 30% less than other BC women.

Irvine, J; Gillis, D. C; Tan, L; Chiu, S; Liu, L; Robson, D
Lung, Breast and Cervical Cancer Incidence and Survival in Saskatchewan Northerners and Registered Indians (1967-86). Arctic Medical Research. University of Manitoba Press. Circumpolar Health 90. Proceedings of the 8th International Congress on Circumpolar Health. Whitehorse, Yukon (May 20-25 1990) 452-6

This report opens with state-of-the-research background information on cancer incidence and survival studies that compare rates among Native people and other Canadians. The authors investigated incidence trends and survival among Aboriginal people in northern Saskatchewan over a 20-year period, with a focus on lung, breast and cervical cancers. Sources of data and a discussion on population are included.

The materials were analyzed in four 5-year periods. Indirect age- and sex-standardization were calculated based on the 1983 standard, and survival rates were also determined. Bar charts and line graphs illustrate the trends for incidence and survival by sex/population. Over the 20 years, 63 lung cancer cases were identified among Indians, and the average age at diagnosis was 64.8. Lung cancer rates increased among all groups, but Indians and northerners experienced poorer survival after diagnosis than did others.

There were 55 female breast cancer cases identified among Indians, with a mean age of 54.1 years at diagnosis. A dramatic increase (4.4-fold) in incidence was observed over the 20 years. The five-year survival rate was 74% when endpoint was death from breast cancer, and 66% when death occurred from any cause. 83 cases of cervical cancer were identified among Indians, more than double the incidence (34) of other northerners. Mean age at diagnosis was 47.3 years - lower than the other populations. Incidence rates increased 52% during the 20 years. Survival rate after 5 years was 75% where endpoint was death from cervical cancer and 42% when death occurred from any cause.

The findings were compared with other published reports from Canada and the US. Results generally agree with those reporting on other Aboriginal populations. Concerns about the rising numbers of breast and lung cancers, which were always lower than the general population, and increasing incidence of cervical cancer among Indians are expressed. Explanations about incidence patterns, survival, and risks are offered. Smoking prevention, adequate screening practices, sex education programs, and other secondary prevention measures are encouraged, with the aim to improve conditions for this culturally and geographically isolated population.

Morgan, Kenneth; Laing, Lory M
The Incidence of Cancer in Registered Indians of Alberta, 1974-78. Chronic Diseases in Canada 2:23 (1981) 33

Some 400 Indian patients from Alberta were identified as having benign and/or malignant cancer diagnoses between 1974-78. Preliminary data on the 177 primary cancer cases is summarized. 64 were male, 113 were female. Distribution by year and sex is given in table form. Observed annual incidence of cancer in Indian males was much less than estimated. Results are compared with 1980 findings on Alaska Natives by Lanier et. al.

Distribution of primary cancers by selected anatomical site is discussed and presented as a table. The most frequent neoplasm in Indian women was cervix in situ, followed by breast cancer and cervix invasive. In males, skin cancers were highest, followed by cancer of the prostate. Combined, cancers of the trachea, bronchus and lung match levels of that of the large intestine and of the testis.

Pickering, Joyce; Lavallee, Claudette; Hanley, James
Cigarette Smoking in Cree Indian School Children of the James Bay Region. Arctic Medical Research 48 (1989) 6-11

Statistics from studies linking morbidity and mortality to smoking open this investigation of the cigarette smoking habits of James Bay Cree Indian school children in northern Quebec. Their health care services are explained. For the study, students 9 to 18 years of age were surveyed to obtain baseline data before an anti-smoking program was introduced in region's schools. Factors associated with cigarette smoking are also probed.

Distribution of smokers by age and sex is shown. From the students in grade 6 and up, 13% were non-smokers, 35.4% were ex-smokers, and 51.4% were current smokers. Mean number of cigarettes per day in daily smokers is calculated and is shown by age. 85% of the smokers believed cigarettes cause cancer. Possible factors behind reasons for taking up smoking are listed.

Robinson, Elizabeth
The Health of the James Bay Cree. Canadian Family Physician 34 (Jul 1988) 1606-1613

This article opens with a review of the socio-economic and cultural factors as primary determinants of mortality and morbidity among the James Bay Cree of Quebec. It describes the evolution from traditional Cree medicine used pre-contact, to the arrival of the Europeans, who brought new infectious diseases and their own health care approaches.

Changes in diet, technology, economy, and social activities and patterns ensued. The introduction of new diseases and epidemics affected the Cree severely in the 18th and 19th centuries, and the *British North America Act* was the first formal policy to outline the federal and provincial responsibility for medical care of the Indians. An account of early medical services is provided, moving into the existing situation.

A section on health status provides facts, statistics, and services on: pregnancy and delivery, infant mortality, infectious diseases, chronic diseases (including cancer), injuries, nutrition, dental caries, mental illness, alcohol abuse and environmental problems, and the information is supported with tables, graphs and charts. "Cancer appears to be less common among the Cree." The types of cancer are shown in table form, attributing 34 James Bay Cree deaths between 1975-82 to cancer. Of these, 11 originated in the digestive system, 9 were lung cancer, 3 breast, 2 prostate, and 9 'other'.

The socio-economic and health status of the Quebec Cree are now governed and managed by the Cree Board of Health and Social Services. The aim is to improve the health status of people living in the eight Cree villages in Northern Quebec, through their increased participation in the delivery, control, access to and promotion of their health programs. Among other things, including geographic limitations, commentary on challenges facing the service providers says, "Many Cree people are obliged to leave their communities and families for services ranging from a simple X-ray or giving birth, to receiving prolonged radiotherapy treatment for cancer."

Schaefer, Otto;
Changing Health Picture of Inuit and Indians in the Northwest Territories from the 1950's to the 1980's. Annals RCPSC 27:2 (Mar 1994) 109-113

The link between cervical cancer and the increase in viral genital infections is discussed briefly in this article on emerging health concerns for the Inuit and Indians of the NWT. Schaefer has documented changes in neoplastic disease patterns for these populations in a separate article.

Threlfall, W. J; Gallagher, R. P; Spinelli, J. J; Band, P. R; Hislop, T. G
Cancer Patterns in British Columbia Native Indians. BC Medical Journal 28:7 (July 1986) 508-510

This article highlights cancer patterns observed among BC Natives from 1953 to 1978. Using tables on male/female cancer mortality, rates for Caucasians and Native Indians are compared. Overall, figures for Native males was roughly half that of Caucasians. They showed far fewer deaths from specific cancer sites (listed), but had slightly higher rates of unspecified neoplasms.

Native females were found to experience overall cancer mortality at rates comparable to those for Caucasians. While their results also displayed reduced mortality from specific cancer sites, they had quadruple the Caucasian rates of cancers of the gallbladder and cervix uteri and double for unspecified neoplasms. Explanations for these unique patterns are offered, substantiating the need for further etiological studies among this population.

Young, T. Kue; Choi, N. W
Cancer Risks Among Residents of Manitoba Indian Reserves, 1970-79. Canadian Medical Association Journal 132 (June 1, 1985) 1269-1272

Responding to concern over increasing rates of malignant neoplasms in the Manitoba Indian population, this study investigated their risks in relation to the general population from 1970-79. Using information from reserve residents only, some 8% of all Indian deaths in the 1970's were attributed to cancer. There were 226 Indian cancer cases identified during the study.

Overall, Indians displayed lower risks than other Manitobans for all types of cancer in the sex and age standardized incidence ratios (SIR). Significantly greater risk for kidney cancer was noted for both sexes, and females were found to have elevated risks for gallbladder and invasive cervical cancer.

The absence of a complete system for tracking ethnicity or identifying Native cancer patients created difficulties in the research. Also, there was no way of including Indians who may have migrated to cities for medical reasons. Future studies will need to address these shortfalls and suggestions are offered. More analytical studies to investigate the disproportionate rates of gallbladder and kidney cancers are required, as is an aggressive campaign to improve participation in cervical cancer screening. The authors urge development, testing and application of culturally appropriate strategies for reducing exposure to risk factors.

CANADA

Canadian Indian Nations Umbrella Plan
Cancer. Info-Bulletin 7:5 (May 2000)

This is a short article on cancer rates and cancer's effects on the Aboriginal population.

Clarke, J. N
Social Inequity, Disease, and Death. Ch. 4 of Health, Illness, and Medicine in Canada McClelland and Stewart, Toronto (1990) 27-34

In a discussion on ethnicity, this chapter includes life expectancy of status/non-status Indians, impacts of colonization, and sex/age specific mortality rates, listing cancer as a cause of death. Facts are presented in tables and text.

Cooper, N; Desaulniers, Suzanne; Maher, John; Masi, Ralph; Milling, Joan; Wigle, Don; Wilkins, Kathryn; Laidlaw, Jack
Inequalities in Cancer Control in Canada. Cancer 2000 (25 Feb 1991)

Prevention, early detection, diagnosis, treatment, rehabilitation, and palliative care were all gauged in relation to factors producing inequalities in cancer control in Canada by comparing socioeconomic status, ethnocultural background, gender, and age. Particular emphasis was placed on Aboriginal populations. Issues presented include the relationship between health and culture, the health care framework, the Aboriginal holistic approach, and socioeconomic/political factors. A literature search on health in general was conducted, looking specifically for the relationship between race/culture and cancer in Canada, and the connection between poverty and lower survival rates. Recommendations for further action and research were made, with specific sections on cancer and socioeconomic status, cultural communities, women, and the elderly.

First Nations and Inuit Regional Health Survey National Steering Committee
First Nations and Inuit Regional Health Survey. National Report (1999) 71-3, and 87-136

This is a report of a national survey on First Nations health. There are sections on chronic diseases (including cancer) and tobacco use. It discusses the difficulty in tracing numbers of Aboriginal people with cancer, prevalence of particular cancer sites among Aboriginal people, geographic variation, the difference in facts pertaining to the Inuit and Status Indians, risks, prevention and control initiatives. The Tobacco Report includes an extensive review of the literature, results from the survey, and a list of references.

Gaudette, Leslie A; Dufour, Rose; Freitag, Sharon; Miller, Anthony B
Cancer Patterns in the Inuit Population of Canada 1970-1984. Arctic Medical Research. University of Manitoba Press. Circumpolar Health 90. Proceedings of the 8th International Congress on Circumpolar Health. Whitehorse, Yukon (May 20-25 1990) 443-6

Cancer patterns among the Inuit have been studied since the early 1970's. Canada has been party to an International Congress on Circumpolar Health, which produced an international monograph on cancer in circumpolar Inuit populations. This article points out the data sources, gaps in the research and participants working on a strategy to identify cancer cases in the northern Inuit population of Canada.

For the fourteen years of the study, Standardized Incidence Ratios (SIR) were calculated to compare cancer incidence rates observed in the Inuit population to those expected from the Canadian population, based on the National Cancer Incidence Reporting System (NCIR). Results were tabulated and reported on by geographic distribution. Areas where incomplete registration or gaps occurred were noted.

Tables, charts and text are used to present numbers of cases and distribution of cancers by site, sex, and year of diagnosis. Lung cancer rates, the number one cancer for both sexes, were alarmingly high. Cervical cancer also ranked high for women. There was no decline in occurrence of cancers of the nasopharynx and salivary glands, two cancers relatively common among the Inuit. Rates for colorectal cancer are similar to those of the Canadian population. Incidence of breast, prostate, bladder and endometrial cancers were rare. Hypotheses are made about the fluctuations and trends observed for all sites.

Recommendations for future action included: continuation of the Inuit cancer registry for future research, prevention efforts to encourage a tobacco-free environment, Pap smear programs, improved access to early diagnosis and treatment for the Inuit, and expansion of the cancer registry to be included in work on an international monograph on cancer.

Health Canada
Aboriginal Breast Cancer Education: A Survey of Resources. (Aug 1995)
Northern Secretariat, First Nations and Inuit Health Branch, Health Canada
60 Queen Street, Suite 1400, Postal Locator 3914A, Ottawa, Ontario, K1A 0K9
Tel: (613) 946-8081 or 1-800-949-2718 Fax: (613) 954-9953 or

This survey consisted of a literature search, outreach survey, and identification of resources and organizations pertaining to Canadian Aboriginal women and breast cancer prior to 1995. Initiatives from Manitoba, Saskatchewan, the Northwest Territories, and the US are outlined. This report attempts to create links between provincial and national efforts in order to share skills and information in the future. Included are a list of pertinent organizations and personal contacts (including University programs and research projects), an overview chart of Canadian contacts (listing resources, users, and projects in progress) and results from the literature searches.

Health Canada.
Health Programs Analysis. (1993 to present).
Indian Health Information Library, Health Canada
Can be obtained through: Northern Secretariat, First Nations and Inuit Health Branch
60 Queen Street, Suite 1400, Postal Locator 3914A, Ottawa, Ontario, K1A 0K9
Tel: (613) 946-8081 or 1-800-949-2718 Fax: (613) 954-9953

Useful for primary trend analysis, health information on registered Indians can be found at the First Nations and Inuit Health Branch (formerly Medical Services Branch) of Health Canada. There are limitations to completeness of the information, which are described in the section on Coverage and Accuracy. Specific to cancer, the most current bar graphs and charts are located under: Crude Death Rates from Cancers (Neoplasms), Indian Population; Overall Death Rate; and Neoplasms/Cancers (ICD 02). In addition, Status Indian, Inuit, and Total Canadian Population by Age and Sex can be accessed.

Mao, Yang; Moloughney, Brent W; Semenciw, Robert M; Morrison, Howard I
Indian Reserve and Registered Indian Mortality in Canada. Canadian Journal of Public Health 83:5 (Sep-Oct 1992) 350-3

Determining patterns of mortality among Native people in Canada has proven difficult, even though this information is valuable for health policy planning, resource allocation, and research. This paper details research from mortality rates of people living in reserve communities, Indians living off reserve or in northern and rural regions, using records from 1979-88.

Information was obtained from Indian and Northern Affairs Canada's (INAC) population and events file, the Canadian Mortality DataBase, and Statistics Canada. Age-standardized mortality rates (ASMR) and proportionate mortality ratios (PMR) are presented in text and tables to demonstrate leading causes of death for registered Indians.

Among females, cancer of the cervix/uterus is listed as 7th leading cause of death in the ASMR, and significantly lower rates of lung cancer were noted in the PMR. Among males, lung cancer is listed as 7th leading cause of death in the ASMR, but significantly reduced in the PMR. Elevated standard mortality rates attributed to death from uterine and cervical cancers were noted.

Study limitations are discussed. For example, in order to be entered on the INAC events file, the death must have been reported voluntarily. More accurate and balanced forms of recording information to determine mortality among this population are desired.

Mao, Yang; Morrison, Howard; Semenciw, Robert; Wigle, Donald
Mortality on Canadian Indian Reserves 1977-1982. Canadian Journal of Public Health 77 (Jul-Aug 1986) 263-77

This report presents information on mortality on Canadian Indian reserves using provincial and national findings, from 1977-82. Assessments were made using age-

specific and age-standardized mortality rates (ASMR) and comparing them to findings from the Canadian population as standard mortality ratios (SMR). Tables and text are used to present the findings on the population living on Indian reserves, all-causes mortality (ages 1-69), age-specific rates, leading causes of death, and specific causes in excess.

On Indian reserves, lung cancer ranked 9th among males and cervical cancer 8th in the list of major causes of death. Data on cancers of the digestive tract, lung, breast, cervix and all sites are provided in the SMR. All-cancer mortality was significantly decreased for both sexes. Based on Canadian rates, Native women experienced about 1/3 the breast cancer deaths, but significantly elevated rates of death due to cervical cancer.

Previous research on lung, cervical, breast, colon and kidney cancers among Indians are discussed. A study is recommended to link records using the Indian registry to characterize the mortality experience of Indians living both on and off reserve.

Masi, Ralph; Mensah, Lynette; McLeod (Editors)
Health and Cultures – Exploring the Relationships. Volume 1: Policies, Professional Practice and Education, and Volume 2: Programs Services and Care. Mosaic Press. (1993)

Approaches to health and health care in the multicultural context unique to North America are the subject of these two volumes. The first focuses on policy development, multicultural health care principles currently in practice, acknowledgement and recognition of racial and cultural diversity, and the need for continuing education of health care professionals to this end.

Chapter 8, entitled "Innovations in Native Community Care: Counselling and Development – A Diploma Program Designed for Para-Professional Health Workers", discusses general health and living conditions for Native people, comparing these to Canadian standards, and presents a chronology of Native Health Care Workers from 1960 to present. A training package, offered through Cambrian and Mohawk Colleges, for Native Community Care is described: history, phases, curriculum, principles, partnerships, standards and evaluation.

Volume 2 investigates issues related to programs and services that take pluralism into consideration. Chapter 6, First Nations Peoples in Urban Settings: Health Issues, opens with the context for Native people in Canada, from a history, to traditional concepts of health, values, factors contributing to change, demographics and patterns, health status, barriers to health care, the urban situation, and recommendations.

Findings: Traditional family values and the importance of involving the extended family in Native patient care; bar graphs indicate a 9.5% cause of death attributed to neoplasms among the registered Indian population from 1980-84 (25.8% for Canadians in general); and higher mortality from cervical cancer among Native women than non-Native women.

Disagreements over relative jurisdictions in delivery of services for Native people, especially those living in urban settings, are documented in the section on barriers to health care and resurface as one of the issues addressed in the recommendations. Meeting the needs of urban Natives was the subject of a national workshop and cross-cultural training for non-Native health care workers was recommended.

In a section on coping with pain, Native Canadians, along with Asians, are mentioned as tending to be stoical about pain, requiring medical staff to pay careful attention to pain control. Concerning death and bereavement, Native people are again described as 'more stoical and accepting in the face of death.'

Warwick, O. H; Phillips, A. J
Cancer Among Canadian Indians. National Cancer Institute of Canada (1954) 223-30

This report cites Palmer's 1936 report that cancer is less frequent among the Indians than other races in the US and Canada. His was one of the earliest reports on cancer among Canadian Indians. His findings were based on observations and enquiry because complete data was not available. A history of health services to Indians dating back to early 17th century French army doctors providing care to the Indians is provided. Sponsored health programs began in 1905. Significant dates, places and services are described.

Early figures on cancer mortality rates of Indians are shown in a table from 1949. From 1948-52, hospital patient records were reviewed. The Indian Health Service found 125 male, and 202 female Indian cancer cases from the 5 years, primarily cancers of the digestive and urinary systems. A table of the figures by site and sex is provided.

Applying Chi-square testing to determine expected age incidence of cancer among Indians, observed number of skin cases was less than expected, and observed number of cases of the cervix uteri was greater than expected. These were the only significant differences between Indians and non-Indians. Cancer of the cervix had a tendency to occur earlier in life among the Indians. This study showed that under age 30 there was no difference in incidence of cancer between Indians and Whites, but after 30 incidence was less among Indians.

Young, T. Kue; McNicol, Patricia; Beauvais, Janet
Factors Associated with Human Papillomavirus Infection Detected by Polymerase Chain Reaction Among Urban Canadian Aboriginal and Non-Aboriginal Women. Sexually Transmitted Diseases 24:5 (May 1997) 293-8

A limited amount of research indicates that Aboriginal women in North America are at increased risk for cervical cancer. There is little systematic data on prevalence of human Papilliomavirus (HPV) infection and other risk factors for cervical cancer in this population.

From 1992-95, a study on molecular diagnosis of HPV infection combined with a comprehensive epidemiological survey of potential cofactors was conducted among

Aboriginal/non-Aboriginal women who attended a predominantly low-income, inner-city primary care clinic in Winnipeg. Results are presented in text and tables.

Information and cervical cell specimens were obtained through interview questionnaires and gynecologic examination. Aboriginal women differed significantly from non-Aboriginal women in a variety of socio-demographic, behavioral and clinical characteristics. From the laboratory tests (cervical cytology, HPV, gonorrhea, and chlamydia), HPV was detected in a third of the specimens collected, but there was no significant difference between specimens from Aboriginal and non-Aboriginal women. Similar findings have been observed in studies among Native women of Greenland and northeastern Brazil.

Young, T. K; Roche, B. A
Factors Associated with Clinical Gallbladder Disease in a Canadian Indian Population. Clinical and Investigative Medicine 13 (1990) 55-9.

Brief mention of the how previous research demonstrates that Cree and Ojibway women are at high risk of gallbladder cancer is included in the discussion section of this article on clinical gallbladder disease in Canadian Indians.

UNITED STATES – STATE and REGIONAL

Adams-Cameron, Meg; Gilliland, Frank D; Hunt, William C; Key, Charles
Trends in Incidence and Treatment for Ductal Carcinoma In Situ in Hispanic, American Indian, and non-Hispanic White Women in New Mexico 1973-1994. Cancer 85:5 (Mar 1 1999) 1084-90

Using 1973-94 data from the New Mexico Tumor Registry, the authors calculated age adjusted incidence rates of ductal carcinoma in situ (DCIS) breast carcinoma among Hispanics, American Indians, and non-Hispanic Whites. Using a number of variables, they also investigated patient and physician characteristics related to breast-conserving surgery (BCS) in this multi-ethnic population from 1985 to 94. Findings are discussed and presented in line graphs and tables.

Substantial increases in incidence rates occurred across all three ethnic groups, particularly from 1985 onward. Each displayed unique patterns. American Indians had the lowest rates for DCIS, although the documentation suggests that this finding may reflect limited access to and use of mammography. After 1990 their numbers more than doubled. Treatment with BCS also increased for all ethnic groups, but there were so few cases among American Indians that their data is not shown.

The strongest factor influencing BCS use was geographic location, with odds of receiving BCS almost six times higher in the northern third of the state. Location of treatment (reflecting physician's influence in treatment choice) related significantly to percentage of clients treated with BCS. Factors of ethnicity, rural/urban residency, socioeconomic status or other physician characteristics revealed no significant variation.

Bartow, S. A; Pathak, D. R; Black, W. C; Key, C. R; Teaf, S. R
Prevalence of Benign, Atypical, and Malignant Breast Lesions in Populations at Different Risk for Breast Cancer – A Forensic Autopsy Study. Cancer 60:11 (1987) 2751-60

A forensic autopsy series of 519 women over 14 years old examined prevalence of benign, atypical, and occult malignant breast lesions in Anglo, Hispanic and American Indian women of New Mexico and Eastern Arizona. With each group at markedly different risk for development of breast cancer (American Indians at the lowest) striking racial and age-related differences in various types of lesions were found to parallel the cancer risk.

Becker, Thomas M; Wheeler, Cosette M; Key, Charles R; Samet, Jonathan M
Cervical Cancer Incidence and Mortality in New Mexico's Hispanics, American Indians, and non-Hispanic Whites. The Western Journal of Medicine 156:4 (April 1992) 376-379

Substantial variations for incidence of cervical cancers have been observed among New Mexico's Hispanics, American Indians and non-Hispanic Whites. For all three

populations, data from the New Mexico Tumor Registry (and other sources) was examined to detail information about both invasive and in situ cervical cancers from 1970-87, using two separate time periods. Earlier vital records were also accessed. Line graphs and tables supplement the results.

To determine ethnicity, American Indians were identified using statements in medical records, place of residence, and through Indian Health Service records. The highest rates for both invasive cervical cancer and cervical carcinoma in situ were found in American Indians. The discussion section provides the dates and geographic locations for several studies that document similar findings about American Indian women and cervical cancer. The percentage of American Indians surviving five years after diagnosis was lower than that of other groups.

Bleed, Daniel M; Risser, David R; Sperry, Sam; Hellhake, Debbie; Helgerson, Steven D **Cancer Incidence and Survival Among American Indians Registered for Indian Health Service Care in Montana 1982-1987.** Journal of the National Cancer Institute 84:19 (Oct 7 1992) 1500-1505

Databases from the Indian Health Service (IHS) and the Montana Central Tumor Registry (MCTR) were linked to determine survival rates cases from 1982 to 1987. Results were compared with US Whites. For males, overall cancer incidence in Montana American Indian men was markedly lower. For women, less marked differences were discovered, but they were found to have significantly higher rates of cervical cancer and significantly lower rates of colorectal, breast and uterine cancers. Survival rates for Native Americans in this state were much lower that for US Whites.

The authors acknowledged diversity in genetics, lifestyles and environmental exposures for American Indian groups from different geographic locations. They compared cancer incidence for IHS-registered Indians in Montana with existing findings from those in New Mexico for the same time period. Using tables, the results are paralleled by cancer site or type. They emphasize the importance of developing cancer surveillance for groups of American Indians who have not been studied to further investigate geographic variation.

In comparison to Caucasians, Montana American Indian rates were significantly higher for cervical cancer among women, and kidney cancer among men. They demonstrated some elevation in incidence of stomach, liver, and gallbladder cancers for females, and liver and gallbladder cancers for males. Rates for all other sites were generally lower for American Indians, and some were significantly so.

Particular concern was expressed about the dramatically low 3-year survival rate for cervical and prostate cancers for Montana American Indians, as these were among the most common cancers reported here. They recommend further investigation into an explanation for the relative low rate of cancer in Montana American Indian men.

Brownstein, J. Nell; Cheal, Nancy; Ackermann, Susan P; Bassford, Tamsen L; Campos-Outcalt, Douglas
Breast and Cervical Cancer Screening in Minority Populations: A Model for Using Lay Health Educators. Journal of Cancer Education 7:4 (1992) 321-6

In order to overcome language, religious, social and ethnic barriers in Arizona, local women were recruited as health promoters to improve mammography and Pap smear screening. They were trained to mediate, network and provide social support for community women through dissemination of cancer information. This article describes the model, guidelines to address stages for program development, methods for recruitment, various aspects of training and culturally sensitive curriculum development, and how to approach program evaluation.

The Arizona Disease Prevention Center and the Center for Disease Control were partners in this project. In 1990, they began recruitment to deliver a program to improve cancer screening among Mexican-American and Yaqui Indian women over 35. Lay educators from the communities served as role models to address some of the emotional and cultural barriers to cancer screening. Efforts were made to ensure that they had both community support and personal skills necessary for education.

Among other aspects, evaluation included comparing the number of women in the target population screened for breast/cervical cancers before and after intervention, and pre-, post-program analysis of their screening results. For outcomes, one key indicator was reduction in stage of cancer at diagnosis.

They looked at how these educators could become a unique link between existing health care networks and priority risk populations. This method was developed to serve as a viable alternative or as an addition to traditional public health strategies. Results were pending on whether these women would be as effective in recruiting women for cancer screening as traditional health professionals.

Creagan, Edward T; Fraumeni, Joseph F
Cancer Mortality Among American Indians 1950-67. Journal of the National Cancer Institute 49:4 (Oct 1972) 959-67

This analysis covered an 18-year period to compare the cancer mortality patterns of Indians with those of Whites and Blacks in the United States. Native Americans had numbers significantly lower than those anticipated from cancer mortality of both Blacks and Whites, and the reduction was more pronounced among males than females. Line graphs show mortality from all malignant neoplasms by race, sex and year, based on 4-year intervals and age-specific mortality from all malignant neoplasms by race and sex. Tables show observed and expected cancer deaths for each population, and the standardized mortality ratios.

In males, gallbladder cancer was the only tumor in which mortality was significantly higher in Indians than in Whites and Blacks. Mortality from gallbladder cancer was also significantly high among Indian females. Trends in gallbladder cancer from 1958-67

showed no significant changes. The risk of deaths from pancreatic cancer was high among Seneca females but not males.

Previously unreported was the significant excess in mortality among Indian females from thyroid cancer and cancer of the nose and paranasal sinuses.

The discussion touches on earlier reported reduced risk of cancer death among male diabetic Indians due to a deficiency of an enzyme, glucose-6-phospate dehydrogenase, but this was not confirmed in the findings from this study.

Davidson, M; Bulkow L. R; Lanier, A. P; Smith, R. A; and others
Incidence of Invasive Cervical Cancer Preceded by Negative Screening in High-Risk Alaska Native Women. Arctic Investigations Program, Centres for Disease Control and Prevention, Anchorage, AK. International Journal of Epidemiology 23:2 (Apr 1994) 238-45

Despite an established cancer-screening program, with recommendations for annual Pap smears, Alaska Native women continue to experience higher invasive cervical cancer incidence than US whites. This study completed a histological and medical review for 44 of 46 Alaska Native cases of invasive cervical cancer from a defined population to determine the frequency and results of cytological screening preceding their diagnosis. They looked at: how many were shown to have an interval cancer within 3 years of diagnosis; mean number of negative reports at 3- and 5-year interval before diagnosis; the age-adjusted incidence rate for all cervical and interval cancer with single and multiple negative reports during the 3-year interval prior to diagnosis; and sensitivity of the Pap to demonstrate dysplasia the year prior to diagnosis. They found that annual screening with current methods would provide earlier diagnosis for only an additional 15% of cervical cancer cases among Alaska Native women, speculating that rapid progression through precursor stages of neoplasia or random screening errors may be occurring. The recommend improved or ancillary screening methods.

Davis, S. M; Lambert, L. C; Cunningham-Sabo, L; Skipper, B. J
Tobacco Use: Baseline Results from Pathways to Health, A School-Based Project for Southwestern American Indian Youth. Preventive Medicine 24:5 (Sep 1995) 454-60

A school-based cancer prevention project for 5th and 7th grade Navajo and Pueblo students was completed using questionnaires about smoking and smokeless tobacco. Responses were gathered among 714 students, and rates of tobacco use are presented by gender. Evidence of experimentation and regular tobacco use at these grade levels was proven, and intended use was confirmed, identifying the need for primary prevention programs in this population. Source: University of New Mexico, Department of Pediatrics, Albuquerque, NM.

Dignan, Mark; Michielutte, Robert; Blinson, Karen; Wells, Bradley; Case, L. Douglas; Sharp, Penny; Davis, Stephen; Konen, Joseph; McQuellon, Richard P
Effectiveness of Health Education to Increase Screening for Cervical Cancer Among Eastern-Band Cherokee Indian Women in North Carolina. Journal of the National Cancer Institute 88:22 (Nov 20 1996) 1670-76

The North Carolina Native-American Cervical Cancer Prevention Project was a five-year health education program trial implemented among Eastern-band Cherokee women to address cervical cancer mortality. Early detection and follow-up treatment for conditions identified by Pap smears were to be achieved via a culturally sensitive health education program.

Concepts for education were based on 'Social Learning Theory' and various models of health behavior. Observational learning and oral communications were encouraged and individual instruction was provided. This report evaluates the program by examining information about participants' knowledge, intentions, and behavior about Pap smears and comparing results from those who did/did not receive the program.

Cherokee interviewers were trained to administer a 96-item questionnaire to collect data on knowledge, intent, and behaviors related to cervical cancer as a pre- and post-test. Women who received the education program exhibited greater knowledge about cervical cancer prevention and were more likely to have had a Pap smear within the past year than women who did not.

Dignan, M; Sharp, P; Blinson, K; Michielutte, R; and others
Development of a Cervical Cancer Education Program for Native American Women in North Carolina. Department of Family and Community Medicine, Bowman Gray School of Medicine. Journal of Cancer Education 9:4 (Winter 1995) 235-42

A five-year project to address excess cervical cancer mortality among Native American women is presented. It focuses on improving screening and follow-up of abnormalities, intervention, health education and awareness. Lay educators were recruited and trained to deliver the program, implementing health education programs for individuals. Findings revealed that any approach to educational programs should begin with an understanding of the participant's outlook and basic assumptions regarding the nature of health and illness and that cultural diversity factors are critical.

Elliot, Barbara A; Johnson, Karen M; Elliott, Thomas E; Day, John J
Enhancing Cancer Pain Control Among American Indians (ECPCAI): A Study of the Ojibwe of Minnesota Journal of Cancer Education 14 (1999) 28-33

This study addressed Anishinabe (Ojibwe) experiences with cancer, its pain and barriers in cancer pain management among members of the four Northern Minnesota reservations of Fond du Lac, Red Lake, White Earth and Leech Lake. Completed over 15 months, the four phases included: focus groups for information and planning, development of brochures at each site (with information gathering and Elder reviews), evaluation of

brochures by Elders to complete pre-/post-tests for cultural assessment, and provision of in-services with cancer pain management materials at each site. Participation criteria included enrolled members living on tribal lands, 50 years and older. The instrument was developed with literature about cancer pain management barriers, previous work of the authors, and advice from Anishinabe people, including two traditional healers. It was piloted among several tribal groups in a medical school setting. Interviews were held via focus group sessions or home interviews completed by the nurses.

Participants addressed what cancer and cancer pain meant to them, perceived barriers to receiving help, medications used, and traditional practices. The facilitator focused on how those barriers might be addressed in the proposed brochures, and solicited cultural components necessary to achieve relevance and sensitivity in the materials. The brochures were developed and reviewed by participants and changes were made based on their experiences and knowledge about cancer pain. A table provides the number and characteristics of study participants. The data is presented by community, with variables including: clinic personnel, Elders (mean age, gender, mean income, cancer presence, education), living alone, and having attended continuing medical education.

All clinical participants had experience caring for patients with cancer. They raised concerns about addiction to pain medication and controlled substances. All Elders knew someone with cancer, and almost a third had cancer. They discussed observations of pain and also raised concerns about addictions. Participants believe that traditional practices can help relieve cancer pain. Brochures with Native artwork were developed and endorsed by the Elder group and tested positively for effectiveness. Another important product was 'Clinical Practice Guidelines for Clinicians Serving American Indians.' Clinical training provided by oncologists was included in 5 seminars.

Discussion reveals that among American Indians/Alaska Natives (AI/AN), pain is not reported until it is severe. Implications for the lay public and those who manage their pain must be considered and an educational process implemented. Regarding medication, misunderstandings are common and careful questioning about pain, its quality, duration and intensity need to occur at each visit. "Working with traditional healers to address the pain in a way that combines the strengths of both cultures respects the traditions of AI/AN people, and may offer more complete management of the pain."

Gilliland, Frank D; Hunt, William C; Key, Charles R
Trends in the Survival of American Indian, Hispanic, and Non-Hispanic White Cancer Patients in New Mexico and Arizona, 1969-1994. Cancer 82:9 (May 1 1998) 1769-83

This 25-year study investigated diagnosis, appropriate therapy and survival for non-Hispanic Whites, American Indians and Hispanics in the American southwest. The authors hypothesized that cancer control efforts such as the Indian Health Service's Cancer Prevention Program, the Pathways to Health Project, and the New Mexico Breast and Cervical Cancer Detection Control Program would result in favorable changes.

They examined temporal trends and ethnic differences in survival for different residents in New Mexico and American Indians in Arizona. Over the study period, the numbers of newly diagnosed, first primary cancers were ascertained. Some of these were excluded as ethnicity other than those under study. Some cases were ascertained with a death certificate or by autopsy only.

Stage of disease was classified. Charts are used to present the findings by site, ethnic group, and time period. Relative 5-year survival was calculated and relative death rates were estimated. Ethnic differences in primary treatment were assessed.

Improvements were achieved in the non-Hispanic White population. In contrast, cancers of all sites combined were detected less frequently at in situ and local stages among Hispanics and American Indians. The number of sites in which cancers were significantly more advanced at diagnosis in fact doubled for Native Americans.

The percentage of cancer patients receiving appropriate treatment during the latter half of the study increased for all three groups. In the earlier period, survival varied by ethnic group for the majority of sites. For all sites combined, American Indians had the lowest survival rate. Results and exceptions for specific sites are described. The final results indicate that over time, disparities in survival widened for Hispanics and Native Americans. Line graphs are used to illustrate relative survival and relative hazard at 5-year intervals.

Differences in age, gender, stage at diagnosis, histology grade, and treatment distribution did not completely explain outcomes pertaining to survival. The outcomes call for a variety of strategies to addressing primary prevention, earlier detection and more effective therapy. While some programs were tailored specifically to the groups studied, innovative facets to intervention are needed. A rationale for factors affecting survival is offered in the discussion.

Hampton, James W; Maher, James F
Pedigree Analysis of Breast Cancer in Oklahoma Indian Women. Cancer supplement 83:8 (Oct 15 1998) 1796-8

As American Indians experience poorer survival rates than Whites, and cancer has become the leading cause of death in Native American women over the past twenty years, this study was undertaken to develop pedigrees of familial breast cancer in Oklahoma Indian women. While susceptibility to breast cancer at a younger age has been determined by identifying the BRCA-1 gene, lack of a Native American counselor specializing in this area limited the research.

With their consent, interviews about individual histories of breast cancer and the history of breast cancer in their relatives were conducted. If the interviewee was unable to provide details, they were re-interviewed to complete the information. Tables are used to demonstrate the numbers, showing blood quantum/pedigree analysis to demonstrate both age at diagnosis and age at time of study.

Interviewees, who were being treated at tribal health facilities, were interviewed to determine if there were familial tendencies for occurrence of the BRCA-1 gene. For one family, presence of the gene was found to be a possibility. Findings indicate that cultural differences and interpretations demand a genetic counselor with a proper background and understanding of American Indians.

Hart, B. L; Steinbock, R. T; Metler, F. A. Jr; Pathak, D. R; Bartow, S. A
Age and Race Related Changes in Mammographic Parenchymal Patterns. Cancer 63:12 (Jun 1989) 2537-9

Markedly different incidence of breast cancer was observed between non-Hispanic Caucasians (highest), Hispanics, and American Indians (lowest) in New Mexico. Researchers examined breast parenchymal patterns and age, noting that American Indian women had a much earlier shift to a lower density parenchymal pattern, as well as a slightly lower percentage of dense breast patterns in older women, than the other groups. The changes in these patterns with age and ethnic groups may reflect factors related to risk of breast cancer.

Hodge, Felicia Schanche; Stubbs, Harrison A; Gurgin, Vonnie; Fredericks, Larri
Knowledge, Attitudes, and Behavior of American Indian Women. Presented at the 6th Biennial Symposium on Minorities, the Medically Underserved and Cancer, Washington, DC in 1997. Cancer supplement 83:8 (Oct 15 1998) 1799-1804

In order to address the 67%, 5-year survival rate for cervical cancer, this project acted upon earlier recommendations to develop culturally appropriate cervical cancer education tailored for American Indian women. Implemented in California, it incorporates traditional modes of education (storytelling, talking circles) into intervention in order to motivate Native people toward healthier behavior. The Center for American Indian Research and Education (CAIRE) designed and tested the program. From 1993-97, educational activities were delivered via eight American Indian clinics in California. This paper reports on how the project affected clients' cervical cancer screening, knowledge levels, and attitudes.

Participants were divided into control and intervention groups. Upon enrollment they completed a pretest questionnaire. Those in the control group received training and information, and those in intervention attended 16 weekly talking circle sessions in addition to the training and information. These were held in various tribal or urban facilities over a period of two years. Medical charts were reviewed by for both intervention and control site clinic records. Afterwards, all women completed a post-test questionnaire.

The description for intervention includes intra-group communication (via talking circles, storytelling and positive role modeling) to deliver stories and discuss their health messages afterward. The curriculum was used to guide the group conversations into issues of cancer risks, prevention, screening, and follow-up care for cervical cancer.

Participants viewed films and handled Pap testing instruments, and received information on health matters and tips.

For evaluation purposes, data pertaining to demographics, cancer history, knowledge, attitudes and behaviors, quality of life issues, and acculturation were gathered. Both pre- and post-tests included statements to which women responded by level of agreement or disagreement. Questions pertained to Pap screening, cancer and cervical cancer, and attitudes surrounding cancer and screening.

Prior to intervention, women in the two groups had similar levels of knowledge. After the post-test, the intervention group members had significantly improved understanding and attitude toward cancer and cervical cancer screening. Those in the control group showed slight improvement. Results are shown using percentages in table format, according to statements made in the questionnaires.

The study demonstrated how culturally sensitive cervical cancer education strategies are crucial for a clearly defined minority population. The effectiveness of this culturally appropriate approach and methodology for teaching about recommended preventive health techniques proved positive and successful for reaching American Indian women.

Hodge, F. S; Cummings, S; Fredericks, L; Kipnis, P and others
Prevalence of Smoking Among Adult American Indian Clinic Users in Northern California. Centre for American Indian Research and Education. American Indian Cancer Control Project (AICCP), Western Consortium for Public Health, Berkeley, CA. Prev Med 24:5 (Sep 1995) 441-6

The AICCP was a 5-year smoking cessation program for Native American adults in Northern California. Conclusions were drawn from a 1991 smoking prevalence survey. A physicians' anti-smoking message was combined with work from Native Community Health Representatives, to deliver the study via 4 urban and 14 rural American Indian clinics. Smoking rates and patterns, and health problems were assessed using a questionnaire among 1,369 participants. Forty percent of the participants smoked cigarettes and were lenient about smoking at an early age. Obesity was the No. 1 health problem, followed by high blood pressure, arthritis, and alcoholism. The highest smoking rate was among the Sioux participants, followed by Maidu, Pit River, Pomo, Hupa, and Yurok.

Horner, Ronnie D
Cancer Mortality in Native Americans in North Carolina. American Journal of Public Health 80:8 (Aug 1990) 940-3

This report describes cancer mortality in Native Americans from 1968-72, and 1978-82. Possible changes over time were investigated. Mortality data were classified by malignant neoplasms found in the International Classification of Diseases, and by specific sites. Use of broad categories was necessary due to limited data specific to cancer sites for Native Americans in North Carolina.

Tables show the proportion of observed cancer deaths by category among Native American and White residents of North Carolina for the dates studied. Among Native Americans, male deaths from cancer of the digestive organs and peritoneum decreased, and deaths from cancers of the respiratory and intrathoracic organs increased. Mortality from prostate cancer was slightly increased, and cancer of the penis and other male genital organs was significantly high for both periods.

Female Native American deaths from cancers of the digestive organs and peritoneum increased, and genitourinary cancer deaths decreased. Similar results were determined in the Standardized Mortality Ratios, though mortality from cancer of the cervix uteri was more than twice that of Whites.

Findings are consistent with earlier investigations among Native Americans. However, this study revealed new evidence of elevated mortality from cancer of the penis and other male genital organs. Elevated mortality in North Carolina Native Americans was found only for cancers of the prostate, male genitalia and cervix. Causes may be attributed to environmental, as opposed to genetic, factors.

Lanier, Anne P
Cancer Incidence in Alaska Natives – Comparison of Two Time Periods, 1989-93 vs. 1969-73. Cancer supplement 83:8 (Oct 15 1998) 1815-7

Numbers of newly diagnosed Alaska Native cancer patients per year more than doubled over the 25-year period of this study, largely due to tobacco-related cancers. Accurate cancer data for Alaska Eskimo, Indian and Aleut populations has been recorded since 1969. Increases in rates for all cancers combined have been observed, but dramatic increases in lung cancers, and moderate rises in breast and prostate cancers are noted.

This report compares findings from the earliest and the latest 5-year time frames for the period under observation. Age-adjusted incidence rates for cancers, by site, are examined for the two 5-year timeframes. For Native males, significant rises in lung, prostate, and colon cancers are of concern. For females, a significant increase in cancers of the lung, breast, and corpus uteri are observed, and a significant decrease in the occurrence of gallbladder cancer is found.

The marked difference in site-specific cancer incidence rates among Alaska Natives, when compared to US Whites, remains a concern. Significantly higher rates in males exist for cancers of the nasopharynx, stomach, and colon – though they do have lower rates of prostate and urinary bladder cancer. Alaska Native women have significantly higher rates of cancers of the colon, and lower rates for cancer of the corpus uteri. The largest increases have been in lung cancer – twofold in men and fourfold in women.

Lanier, Anne P
Epidemiology of Cancer in Alaska Natives. Alaska Medicine 35:4 (Oct-Dec 1993) 245-7

Cancer patterns among Alaska Native have been documented since 1969. They differ from all other US populations, but resemble findings from Inuit populations from other countries. Cost/benefit ratios for recommended cancer screening procedures are examined. Since over a third of the cancer deaths are tobacco-related, a focus is placed on eradication of tobacco use.

Lanier, Anne; Bender, Thomas; Talbot, Marion; Wilmeth, Sally; Tschopp, Charles; Henle, Werner; Henle, Gertrude; Ritter, Donald; Terasaki, Paul
Nasopharyngeal Carcinoma in Alaskan Eskimo Indians, and Aleuts: A Review of Cases and Study of Epstein-Barr Virus, HLA, and Environmental Risk Factors. Cancer 46 (1980) 2100-6

Epidemiological and clinical features of 31 Alaska Native nasopharyngeal carcinoma (NPC) patients from 1966-76 are described, and similarities with patients from southern China were discovered. The researchers looked at viral serology, histocompatibilty, antigen typing, and viral cultures, and used a questionnaire for patients. Control and patient groups were compared, taking into consideration patient history, residential conditions, exposure, diet, hygiene, transportation, medical history, drug use, and family history of cancer.

The number of Native (Eskimo, Indian and Aleut) patients increased to more than double from the first half of the study to the second. All three ethnic groups were found to be at increased risk relative to US Whites, but particular concern was expressed for the Eskimo population. Tables demonstrate the NPC in Alaskan Natives by sex and ethnic group, by pretreatment for Epstein-Barr Virus (EBV) titers by stage of disease and by antibody to E-B antigens.

Results confirm previous reports of high rates of NPC in Alaskan Natives. The rising risk factor is a concern for this population. Further studies are required to probe more deeply into the correlation between EBV antibody titers with activity and stage of disease. At time of print, similar studies were in progress on tumor specimens from Alaskan patients.

Lanier, A. P; Bulkow, L. R; Ireland, B
Cancer in Alaskan Indians, Eskimos, and Aleuts, 1969-83: Implications for Etiology and Control. Public Health Reports 104:6 (Nov-Dec 1989) 658-64

This public health report presents cancer incidence data for Indians, Eskimos and Aleuts in Alaska from 1969 to 1983. Frequencies and trends for each ethnic and linguistic group/subgroup are compared using five-year intervals. Tables present numbers of cases for men and women by ethnic group. Observed to expected (O:E) ratios were determined for specific cancer sites.

For all groups, rates were high for many cancer sites in the gastrointestinal tract. Gallbladder cancer in Indian women was significantly high. Native women were found to be at particularly increased risk for cervical cancer, but low in other female cancer sites. Breast cancer trends differed for Eskimos and Indians.

The data for trends in incidence was only possible for Indians and Eskimos, as there were not enough Aleut patients. Increasing incidence for all types of cancer in Eskimo women was noted. Dramatic increases in lung cancer for both Eskimo males and females were found. Prostate cancer was increasing among both populations. Colorectal cancer rates among all Native people equaled or exceeded those of Whites. Overall, there were no downward trends.

Though overall cancer incidence in Alaska Native people is nearly equal to that of US Whites, marked differences between the two were found. Higher and lower rates for particular sites are documented and illustrated in detail in the article. Rising cancer rates for Alaska Native people suggest that incidence for this population will soon exceed rates for Whites, and this warranted aggressive prevention and control initiatives.

As cancer patterns vary nation-wide, differences were also proven to exist among local ethnic groups in Alaska. For several sites with increased risks for Native people (nasopharynx, salivary gland, liver, cervix and esophagus), viruses were thought to be associated. As well, cultural changes experienced among these groups may attribute to some of the patterns. Continued monitoring, and prevention work (especially to curb tobacco use) are recommended.

Mahoney, Martin C: Michalek, Arthur M; Cummings, Michael; Nasca, Philip C; Emrich, Lawrence J
Cancer Mortality in a Northeastern Native American Population. Cancer 64 (July 1 1989) 187-90

The importance of considering cancer mortality patterns among defined racial and ethnic groups was emphasized in this investigation into trends among adult members of the Seneca Nation of Indians (New York State) from 1955 to 1984. A retrospective cohort study design was used to examine patterns, calculate expected numbers of cancer deaths, and determine sex and age adjusted mortality ratios (SMR).

Numbers of deaths due to malignant neoplasms were 65 for males, and 56 for females during the study period. A breakdown of percentages by cancer site is provided. Site-specific age standardized SMR's by sex is provided in table form.

In both sexes, significant deficits of mortality for all sites combined was observed. For females, site-specific deficits in mortality from cancers of the breast and pancreas, and significantly elevated mortality for deaths due to cervical cancer were determined. The authors would like more information on dietary practices among this population and data on other Native groups from across North America to compare findings.

Mahoney, Martin C: Michalek, Arthur M; Cummings, Michael; Nasca, Philip C; Emrich, Lawrence J
Cancer Surveillance in a Northeastern Native American Population. Cancer 64 (July 1 1989) 191-5

Cancer incidence was observed among the Seneca Nation of Indians (SNI) and compared with general patterns among New York state (using the NY State Cancer Registry) residents between 1955-84. They had significantly lower incidence for all sites combined, and deficits are presented by specific site. Lung cancers represented the largest percentage of observed malignancies, and common tumor sites among males were prostate, colon, rectum, pancreas and kidney. Common tumor sites among women were malignancies of the breast, lung, cervix (invasive), uterus, colon, cervix and rectum. Sex and age standardized incidence ratios (SIR) are presented in tables and in text.

Deficits in overall cancer incidence among the Seneca are similar to findings reported among Natives in other areas of the US and Canada. Seneca females exhibited notably low incidence of breast, colon, bladder cancers and lymphoma. Hypotheses on the connection between North American Natives and Asiatic peoples are postulated, and consideration of genetic and lifestyle factors are mentioned.

Margolis, K. L; Lurie, N; McGovern, P. G; Slater, J. S
Predictors of Failure to Attend Scheduled Mammography Appointments at a Public Teaching Hospital. Journal of General Internal Medicine 8:11 (1993) 602-5

Along with women under the age of 60 and the uninsured, Native American women were found to have high rates of mammography appointment failure in this study, conducted at the Hennepin County Medical Center in Minneapolis, MN. Interventions to improve breast cancer screening will require special efforts to address particular groups.

Michalek, Arthur M; Mahoney, Martin C; Cummings, Michael; Hanley, John; Snyder, Rae
Mortality Patterns Among a Native American Population in New York State. New York State Journal of Medicine (Oct 1989) 557-61

This study reports on patterns of mortality among the Seneca Nation of Indians observed over thirty years, from 1955 to 1984. Causes of death are presented in pie chart form, and tables present data on cause-specific proportionate mortality ratios (PMR) by sex. Fewer than expected deaths were observed for all cancers combined and, specifically for cancers of the lung, pancreas and breast, and lymphatic/hematopoietic cancers.

Males had depressed levels of all neoplasms combined, lymphatic/hematopoietic cancers, and pneumonia. Females had deficits of mortality for cancers of the breast, lymphatic/hematopoietic system, pancreas and for all neoplasms combined. PMRs for all neoplasms combined rose slightly in the first and third ten-year periods, but remained significantly lower than expected levels. Citations about similar findings among Native Americans in other places are included. Generally reflective, this study failed to replicate

heightened mortality due to cancers of the gallbladder as found in Alaska and New Mexico.

Norsted, T. L; White, B
Cancer Incidence Among Native Americans of Western Washington. International Journal of Epidemiology 18:1 (1989) 22-7

Cancer incidence in Native Americans from the Seattle-Puget Sound area of western Washington was examined, using data from 1974-83. In comparison to Caucasians, Native Americans were at lower risk in most age categories. Tables present average annual cancer incidence for each population, average annual sex/age-standardized incidence ratios, and proportional cancer incidence ratios for each anatomical site with at least five observed or expected cases. Native American females had 42%, and males had 56% of the Caucasian rates overall.

Native women had a relative excess of cervical cancer, and significantly decreased risk of cancer of the corpus uterus. Males had a 50% or more deficit of prostate cancer. There was a possible excess of gall bladder cancer for both sexes. Being the first study conducted among Native Americans in the area, the results were in accordance with earlier studies among Native Americans in other states. However, unlike Alaska Native rates, no excessive rates of cancer of the nasopharynx were found.

The authors discuss urbanization and consequent genetic admixture with other ethnic groups, changes in diet, lifestyle, alcoholism, and increased tobacco use as possible explanations for changes in proportional cancer incidence among Native Americans. They also cite differences in medical care utilization as contributing to outcomes. They recommend systematic surveillance of cancer incidence among this Native population, and investigation into the relation between cancer and certain risk factors.

Samet, Jonathan M; Key, Charles R; Hunt, William C; Goodwin, James S
Survival of American Indian and Hispanic Cancer Patients in New Mexico and Arizona, 1969-82. Journal of the National Cancer Institute 79:3 (Sep 1987) 457-63

Survival by ethnic group for all incident cancer cases diagnosed from 1969-82 was examined using existing data on New Mexico residents and Arizona Indians. Each group displays distinct patterns of incidence and mortality for most major cancer sites when compared to data on US Whites. Hospitals provided abstracts on cancer cases histopathology and cytology logs, discharge diagnoses, autopsy reports, death certificates, radiation therapy records and physicians' reports.

American Indians were identified primarily by statements in the records, but place of residence and treating hospital were used as secondary identifiers. Analysis was limited to lymphomas and epithelial tumors of specific sites. Stage at diagnosis was classified into four categories (in situ, local, regional, and distant) and compared between ethnic groups. American Indians and Hispanics tended to have more advanced disease at time of diagnosis, and poorer survival rates. This suggested effect of ethnicity on survival.

Therapy varied, and nine distinct treatment courses were identified. Information on follow-up was also considered. Methodology for calculating 1- and 5-year survival rates is described and those for American Indians were generally poorer. Effects of ethnicity on survival, treatment, and stage at diagnosis were considered using specific covariates. For many primary cancer sites, American Indian patients were the least likely to receive treatments for their cancers.

In turn, they demonstrated significantly poorer survival for cancers of the rectum, lung, breast, cervix and urinary bladder, and for Hodgkin's disease. Comparisons are illustrated in the tables provided. Across the sites considered, consistent evidence of increased relative hazard in Hispanics and American Indians over age 65 in comparison with those younger was not found.

This study demonstrated how ethnicity is an important, though not ultimate determinant for stage of cancer at diagnosis, receipt of treatment, and survival following diagnosis. Poverty, access to and use of care, cultural influences and reliance on traditional health care may all lead to ethnic variations in stage at diagnosis, poorer compliance with therapy, and poorer survival than Whites.

The authors look toward finding more sources of information on survival in Hispanic and American Indians, particularly pertaining to stage, treatment, and survival of American Indians. They believe that age and ethnicity have independent effects that together place Hispanic and American Indian Elders at high risk for an unfavourable course after diagnosis. They recommend culturally appropriate programs to achieve earlier diagnosis and appropriate treatment.

Stillwater, B; Echevarria, VA; Laneir, AP
Pilot Test of A Cervical Cancer Prevention Video Developed for Alaska Native Women. Alaska Native Area Native Health Services, Anchorage, AK. Public Health Reports 110:2 (Mar-Apr 1995) 211-4

This Alaska Native Women's Health Project study revealed the need for more education and prevention work on cervical cancer, and that no materials to date were culturally appropriate. Because cervical cancer occurs twice as often among Alaska Native women than women in the US in general, a random sample of 528 Alaska Native women were asked about their knowledge, attitudes and behavior about cervical cancer and associated risks. A video was then developed using Alaska Native Women as role models to discuss cervical cancer, testing, and to promote healthy living. When piloted among a surveyed audience, knowledge gained from the tape increased significantly, and there were positive results from the cultural content. Recommendations are made for future development of similar materials to prevent cancer among Alaska Native women. .

Strickland, C. June; Chrisman, Noel J; Yallup, Martha; Powell, Kolynn; Squeoch, Marion Dick

Walking the Journey of Womanhood: Yakama Indian Women and Papanicolaou (Pap) Test Screening. Public Health Nursing 13:2 (April 1996) 141-150

This study was part of a larger collaborative effort in community capacity building among the Yakama Nation, the University of Washington School of Nursing faculty, and the Pacific Northwest Cancer Information Service. In addressing barriers to Pap test and follow-up screening, little attention has been directed toward gaining a holistic, culturally based understanding of the Pap test for American Indian women. In designing more comprehensive community based interventions, understanding of cultural values and traditions are required.

This literature review acts as a framework to provide an understanding of existing related research, and supports the use of an inductive research methodology. Interventions aimed at improving cervical cancer screening behaviors have focused on providing knowledge through brochures, videotapes, group classes and using feedback mechanisms like record tracking and computer alerts indicating when a patient needs a Pap test.

Barriers to access for screening include lack of transportation, childcare, insurance coverage, community care, and embarrassment, cultural beliefs and consideration. Existing reports and citations are provided, before the narrative moves into the importance of understanding the woman's sense of self and role in the community afforded by American Indian women. It calls for a greater understanding of the influence of cultural values and beliefs to determine their impact on choices made about Pap screening.

The researchers made a commitment to community capacity building in this work. Participant observation data was collected, and focus groups were used to validate emerging codes. The paradigm created was circular, with "Walking the journey of womanhood" as the major theme. Phases included "Starting the journey (entry into womanhood)," "Blooming," "Heading the household," and "Becoming an Elder." Each is described in a cultural context with interview feedback.

From the focus group work, the meaning of cervical cancer and issues related to death and dying came up. The authors recognized the value of the sweat lodge as an opportunity for Elders to share messages with the family and wisdom behind holistic approaches to cancer prevention. Emphasis was placed on messages that focus on staying healthy to pass on culture to future generations and how this can link with meeting community and individual needs.

The Authors noted that women did not often discuss the causes of cancer, and that death would not easily be used as a motivator for taking preventive action in the Native American worldview. The found that Pap test screening interventions need to be directed to the structure of care, provider-patient communications and community education of Yakama women.

During the period of study, the Yakama Indian Health Center introduced home visits by Community Health Program staff for women who had abnormal Pap tests. These were able to increase follow-up colposcopy from 30% to 100%.

The study results demonstrate that intervention needs to focus on use of women heading the household and Elders to convey messages to youth. Traditional Native methods of sharing knowledge are needed to supplement Western approaches to teaching and learning about intervention, especially for less acculturated women.

The message needs to be framed in terms of getting a Pap test to contribute to wellness, rather than to prevent cancer. Women tended to associate the Pap test with childbearing and sexual activity, and did not appear to relate it to cancer and cancer prevention. At time of printing, research was in progress to address the relationship of spiritual beliefs to preventive behaviors.

Sugarman, Jonathan R; Dennis, Leslie K; White, Emily
Cancer Survival Among American Indians of Western Washington. Cancer Causes and Control 5 (1994) 440-8

Cancer survival among American Indians included in the Seattle-Puget Sound Cancer registry was evaluated and determined to be poorer than that among Whites in the same region. The authors determined that aside from age, differences in stage at diagnosis, lack of cancer treatment, and residence in non-urban counties, other factors must effect cancer survival for this population.

This study reinforced the need for further study into regional variation and cultural diversity among American Indian tribes in discussions of cancer incidence and mortality. The researchers compared records from American Indians with data on Whites in the same region, examining survival for five specific cancer sites (lung, colorectal, cervical, prostate, and female breast) before and after adjusting for selected, potentially confounding variables.

Data was obtained from hospitals in the area and offices of pathologists, oncologists, and radiotherapists. Patients were excluded if their initial diagnosis was made only at autopsy or on a death certificate. Among American Indians, two cohorts were studied. The first were American Indian, Aleut or Eskimo cases recorded in the tumor registry of the National Cancer Institute's Surveillance, Epidemiology, and End Results (SEER) program. The second were SEER-coded clients registered with the Portland area Indian Health Service, but coded to other races in the tumor registry.

Information was gathered about stage of disease at diagnosis, urban residence, receipt of cancer directed therapy, and survival time. Cancers in each of the five sites were classified into four categories for stage of disease at diagnosis (in situ, local, regional or distant). Treatment options for surgery, radiation, chemotherapy, hormonal therapy,

immunotherapy, other cancer-directed therapy, or participation in a double-blind study (code not yet broken) were recorded. These are all SEER classifications.

Number and distribution of cases by site, race and stage at diagnosis are described and shown in table format. Another table shows no apparent racial differences between patients receiving treatment when stratified by stage at diagnosis. A third shows that American Indians experience poorer survival rates from prostate, breast, cervical and colorectal cancers.

Concern over presentation at a later stage of disease by American Indians prompted an investigation into its relation to survival rates. Differences in stage at diagnosis did not account for poorer survival of Indians when compared to Whites. Issues of lack of treatment or possible differences in cancer care between urban/non-urban areas were probed and these results are tabled.

Although cancer incidence in Washington is reported to be lower among American Indians than Whites, malignant neoplasms are the second leading cause of death for American Indians there.

Their survival is generally worse. Consistency with findings about Indians from other states is discussed and parallels to findings from New Mexico and Montana are drawn. Information on stage at diagnosis among American Indians and Whites differed only in poorer survival for prostate cancer for the SEER-coded American Indians. This was one finding unique to this study.

Geographic difference and urban/rural residency may result in differences in cancer awareness or the propensity to seek medical treatment in facilities that offer screening and opportunities for earlier diagnosis. However, this study proved that neither stage at diagnosis, failure to receive treatment or urban/non-urban residence accounted for survival in the tumors investigated.

The authors recommended further examination into: detailed categorization of the extent and type of cancer treatment, improved biological racial tracking, genetic and environmental interaction, obesity, and poverty to see how these factors relate to survival differences. Their results warrant a focus on prevention and smoking cessation as well as assurance of American Indian access to state-of-the-art treatment for cancers amenable to therapy.

Weiner, D
Health Beliefs About Cancer Among the Luiseno Indians of California. Alaska Medicine 35:4 (Oct-Dec 1993) 285-96 Department of Anthropology, UCLA

For the Luiseno Indians, cancer is considered a tumor or growth which may be life threatening. Current and former cancer patients believe their cancer comes from genetic predilection and/or God's will, but other band members without cancer believe that

cancer is caused by pollutants or prior biomedical treatments gone awry. Varying cancer etiologies among the Luiseno Indians are paralleled with their impact on prevention.

Welty, Thomas K
Cancer and Cancer Prevention and Control Programs in the Aberdeen Area Indian Health Service. American Indian Culture and Research Journal. 16:3 (1992) 117-37

This article reviews cancer prevention and control interventions being conducted in the Aberdeen Area (North Dakota, South Dakota, Iowa and Nebraska) Indian Health Service. It begins with existing studies that demonstrate geographic variation and documentation on how American Indian cancer incidence and survival vary in comparison to that of all races in the US.

Tables and bar charts are used to demonstrate the impact smoking has on mortality for cardiovascular disease. Mortality causes and rates for specific cancer types are compared among Aberdeen area Indians, all Indians, and US all races and discussions are supplemented with tables and charts.

The research calls for intensified cancer screening in the post-40 age group, as most deaths from cervical and breast cancer occur in older women. A table outlines cancer control activities being implemented in the Aberdeen area, and initiatives are grouped into efforts toward risk factor reduction, community empowerment, audits of care, cancer screening, and cancer research.

In screening for cancer, there is a need for continuing culturally sensitive prevention programs. There is a description of the IHS-ordered Indian-specific Health Risk Appraisal that was presented at the First National Conference on Cancer in Native Americans. This was an early attempt at culturally specific prevention, where they recorded responses to questions on breast self-exam, clinical breast exam, family history, and Pap smears.

In audits for quality of care, the article points out that the IHS diabetes control program has set national standards that include cancer screening. In addition, IHS keeps computerized medical records to help develop cancer registries. An advisory group developed a Guide to Clinical Preventive Services, which is described in the article.

A gap in information in Indian-specific materials is identified, especially pertaining to smoking, tobacco as a sacred plant, and use by traditional healers in ceremonies. For adolescents, more curricula and intervention needs to be designed to improve the health of Indian adolescents. Welty recommends that cancer epidemiology needs to be monitored among Native Americans by area.

Welty, T; Zephier, N; Schweigman, K; Blake, B; Leonardson, G
Cancer Risk Factors in Three Sioux Tribes – Use of the Indian-Specific Health Risk Appraisal for Data Collection and Analysis. Proceedings from 'Cancer in Indian Country,' the 2nd National Conference on Cancer in Native Americans. Alaska Medicine 35:4 (1993) 265-72

The Sioux Cancer Study investigated cancer and cancer risk factors among tribal members aged 45-74 in North and South Dakota. A health risk appraisal was used to gather data and provide recommendations to participants. High smoking rates explained high lung cancer mortality, and an aggressive smoking cessation/prevention strategy was recommended. Access to cervical and breast cancer screening was called for, as were efforts to reduce obesity and alcohol use. Community-based prevention and control were planned to reduce preventable cancer deaths.

Wiggins, Charles L; Becker, Thomas M; Key, Charles R; Samet, Jonathan M
Cancer Mortality among New Mexico's Hispanics, American Indians, and Non-Hispanic Whites, 1958-1987. Journal of the National Cancer Institute 85:20 (Oct 20 1993) 1670-8

Within each of New Mexico's ethnic groups, overall cancer mortality increased over the 30-year time-span studied for this report. Rates were greater for males than for females. This study underscores the need for appropriately designed etiologic studies of cancer in diverse racial and ethnic groups.

American Indians in the area are primarily Navajo, Pueblo, and Apache. Medicine people and traditional healers are reported to still play an important role in their health care provision. The study found striking differences in cancer incidence and mortality in New Mexico for specific cancer sites and demonstrated how rapid changes have occurred in mortality rates within a period of one generation.

Detailed charts outline categories for selected malignant neoplasms, average annual age-adjusted cancer mortality rates by selected cancer primary sites for New Mexico non-Hispanic Whites, Hispanics, American Indians, US Whites and US Blacks. The discussion provides an overview of variation in mortality from existing data and reports, and moves into findings by site.

UNITED STATES - NATIONAL

Baquet, Claudia R
Native Americans' Cancer Rates in Comparison with Other Peoples of Color.
Cancer supplement 78:7 (Oct 1 1996) 1538-1544

The disproportionate rate of cancer in peoples of color is examined. Among Native Americans, divergent cancer patterns appear among this population. Elevated rates among Alaska Natives and Native Hawaiians are proven to be camouflaged when data are collapsed into 'other' racial categories. These are the findings from a Native American Cancer intervention research program from the National Cancer Institute (NCI). Age-adjusted incidence and mortality data and survival rates were derived using primarily the NCI's Surveillance, Epidemiology, and End Results (SEER) program.

American Indians were recorded as having higher incidence rates of cervical, stomach, liver, gall bladder, kidney and renal cancers than African Americans and Whites. They showed significantly lower rates of female breast cancer, lung, uterine corpus, and prostate cancer incidence than whites and African Americans.

Mortality data reveals that for all sites combined, the age-adjusted rate for American Indians is lower than whites (but not as low as Filipino). Indians have higher mortality rates from cervical, stomach, and gallbladder cancers than African Americans and whites, and lower mortality rates from kidney and renal pelvis cancer, female breast cancer, lung and bronchus, uterine corpus, and prostate cancers.

American Indians have the poorest 5-year relative survival rate from all cancer sites combined than any other group. Percentage rates show lower survival than African Americans and Whites from cancers of the stomach, colon and rectum, liver, gallbladder, pancreas, lung and bronchus, breast, prostate gland, kidney and renal pelvis, and non-Hodgkin's lymphoma.

Strategies to protect the health of people of color include continuing NCI research on American Indians and Alaska Natives, advocacy activities for this sector of the population, and culturally focused intervention.

Becker, Thomas M; Joe, Jennie R; Cobb, Nathaniel; Burhansstipanov, Linda; Pederson, Catherine D.
Training for Cancer Control Research: A Curriculum for Native Researchers.
Journal of Cancer Education 14 (1999) 233-237

This cancer control research curriculum was designed and monitored among 35 Native health care workers (via the University of New Mexico, the University of Arizona, and the University of Washington) over a three-year period. Its purpose was to develop an interactive program to increase the research capabilities of Native investigators to carry out well-designed cancer prevention and control research strategies and intervention programs within their populations.

The program now includes understanding principles of epidemiology, data management, data analysis, and grant and manuscript preparation. It also has consultation and mentoring for grant writing and project implementation after training, with faculty available for problem solving. The aim is for Native researchers to use cancer prevention and control efforts to reduce incidence and mortality from cancer among high-risk Native populations.

Materials and methods, timetable, selection of trainees, curriculum, and resources used in the course are included. The results present a profile on the participants, results from daily "case-based" questions to assess trainee knowledge and progress (particularly in data management, cancer control study design, and data analysis). Participants went on to pursue advanced degrees, receive awards and related research grants, or change their professional positions to focus more on cancer control activities among Native people.

A discussion section presents the need to clearly document cancer incidence rates and cancer survival among Native people in the United States and its territories, including American Indians, Alaska Natives, Native Hawaiians, and American Samoans. Involvement of Native people in carrying out the research in Native populations is a priority. The training project is seen as an initiative to increase competence in making this happen. A list of references provided.

Brant, Jeannine M
Breast Cancer Challenges in Native American Women. Ch. 21 from Ethnicity and Culture in Breast Cancer. 243-52

This chapter provides statistics to place breast cancer incidence among Native American and Alaska Native women in the context of that of other races, citing regional variability where higher incidence occurs. Age-adjusted breast cancer incidence rates for selected tribes and (Indian Health Service) IHS areas are presented in bar chart. Demographics for mortality and survival rates are provided, with explanations and supporting documentation citations. The focus is on the 5-year survival rate (48.8%) of Native Americans with breast cancer.

The risk factors are divided into discussions on genetic and environmental factors. Barriers to early detection are presented in sections on health care, poverty, education, cultural barriers and traditional medicine. A section on nursing implications covers communicating with Native American women (with a 10-point list of helpful tips), assessment, planning and implementation, (with a table on Nursing Implications and Cultural Tools for Native American Women with Breast Cancer-according to cancer trajectory), support, evaluation, and follow-up. This whole section offers advice for the oncology nurse working on building relationships with individual tribes and reservations.

The author identifies the need for more educationally appropriate and culturally sensitive materials about breast cancer and options for treatment and cancer program development dollars for reservations.

Brant, Jeannine M; Fallsdown, Delores; and Iverson, Mary Lou
The Evolution of a Breast Health Program for Plains Indian Women. Indian Health Service ONF 26:4 (1999) 731-9

Culturally sensitive breast cancer screening and education programs were developed and piloted among Native women in Montana and Wyoming to address the poor 5-year survival rate of Native American women with breast cancer (49%). The impact of cultural influences on the target population is presented in the context of poverty, substance abuse, the traditional role of the Native American woman, rural issues, the health care system, and beliefs about cancer,.

Native American educator/coordinators worked with local oncologists on the Billings Interhospital Oncology Project in 1989, which attempted to gather Native American patients for a cancer clinical trial. The study identified an overall lack of education about, and a prevalent fear of cancer. The focus shifted to cancer education for Native American women. Strategies included individualized education and mentoring, distribution of culturally sensitive and appropriate materials, and professional education.

The project has initiated collaboration among clinical and Native American staff and participants, a growing trust and respect, and improved communication about cancer. Numbers of women requesting clinical breast examinations and mammograms increased from 5 to between 15 and 30 every month.

It has expanded through various grants, and the new goals are presented. Tables in the article include a helpful listing of Native American and Low Literacy Breast Cancer Education Materials (kits, folders, brochures, posters and fact sheets); and Phases of the Expanded Educational Programs (interventions and outcomes).

Implications for oncology nursing are to sensitize nurses who plan to work with Native American people, building a trusting relationship, and an understanding of the culture. A list of methods to reach Native American women for Breast Health Education is provided. Goals for the program include a review of the past 10 years, holding a celebration of cancer survivorship and breast health and wellness for Native American women and implementation of a detailed teaching module (1-pg. Included at the end).

Burhansstipanov, L
National Cancer Institute's Native American Cancer Research Projects. Native American Cancer Control, National Cancer Institute (NCI). Alaska Medicine 35:4 (Oct-Dec 1993) 248-54

NCI initiatives pertaining to indigenous peoples from 1987 on are described. They include: four intervention research projects on cervical and breast cancer among Native Americans; four intervention research projects on the prevention of tobacco and dietary cancer risk factors among American Indians; investigator-initiated developmental research grants on cervical and breast cancer; intra-agency agreements with the Indian Health Service; the Network for Cancer Control Research among American Indian and Alaska Native Populations; Native American Training Opportunities Meeting; and Data-based Intervention Research projects which focus on Native Americans.

Burhansstipanov, Linda
Cancer Mortality Among Native Americans [Editorial]. Cancer supplement. 83:11 (Dec 1 1998) 2247-50

This editorial was written in response to Cobb and Paisano's article of the same name. It points out how cancer sites experienced by Native populations vary among geographic regions. For example, while lung, breast and colon are priority sites for cancer intervention among the Northern and Plains communities, cervix, stomach and gallbladder may be priorities among Native communities in the southwest. The National Cancer Institute's (NCI) data from Arizona and New Mexico's Native populations has been used extensively, and the concern is that generalization made be made about Native Americans in other parts of the country.

There is also concern about the underreporting of cancer on death certificates for Native patients, resulting in racial misclassification and therefore seemingly lower incidence and mortality rates for Native Americans. The author documents proof that even doctors are misled by the belief, and advise patients, "Indian people almost never get cancer."

The editorial stresses the need for separate expansion of the NCI's Surveillance, Epidemiology, and End Results (SEER) database to cover the Northern and Plains regions of the US to gain a better understanding of other tribal communities. Data from urban clinics and programs is lacking. This information would allow for better insight into how and where urban Native cancer patients are screened, diagnosed and treated, or if relocation for better access to services is required.

There is a general concern that cancer in American Indian and Alaska Native populations is greatly understudied, making it difficult to determine risk factors or observe accurate cancer patterns among this population. The article points out inconsistencies in financial allocations for cancer prevention and control, and concludes with a discussion on existing services.

Burhansstipanov, Linda
Native American Cancer Programs – Recommendations for Increased Support. Cancer supplement. 83:8 (Oct 15 1988) 1849-55

In April 1977, the 'Sixth Biennial Symposium on Minorities, the Medically Underserved and Cancer' was held in Washington, DC. Recommendations gleaned from the presentations that highlighted Native American cancer issues are summarized in this paper. They include greater efforts to initiate or support:

- community-driven cancer intervention (benefits are listed);
- utilization, visibility and leadership opportunities for Native American cancer survivors;
- a National Native American cancer registry (survivor's surveillance system);
- culturally relevant and competent interventions to increase Native American cancer patients' survival (statistics are cited);
- unique initiatives to ensure access to state-of-the-art cancer prevention and control services, interventions and clinical trials;
- culturally relevant cancer support programs and/or 'navigator' or 'Native Sister' patient support;
- a clearinghouse for Native American cancer resources;
- paid positions for survivors who work in cancer research;
- access to racially specific and accurate cancer databases (those in existence are listed) and avoidance of racial misclassification;
- clarification on tribal and geographic variations in cancer reports on Native Americans (i.e., not generalizing all Native Americans based on incidence reported in Arizona and New Mexico);
- caution in using cost-effectiveness as project/grant review criterion (examples are given to prove that, concerning cancer research, it requires 3-5 years to develop trust with Native communities);
- Native American inclusion in scientific cancer research initiatives
- special initiatives and research opportunities for the medically underserved; and
- racially specific age-adjusted disease data from federal agencies, based on the same standard population formula for calculating incidence and mortality to allow for comparability.

Burhansstipanov, Linda; Dignan, Mark B; Bad Wound, Della; Tenny, Martha; Vigil, Gaylene
Native American Recruitment into Breast Cancer Screening: The NAWWA Project. Journal of Cancer Education 15 (2000) 28-32

This study investigates the changing rates of lower susceptibility of breast cancer in Indigenous women. The Indian Health Service (IHS) noted increases among Native women in the southwestern United States between 1989 and 1993, placing rates equivalent to the general population. This report describes the development and evaluation of the Native American Women's Wellness Through Awareness (NAWWA)

program, a health education effort among American Indian women using outreach to increase participation in mammography.

The program, a community-based breast cancer education project developed for urban Indian women, was developed as a culturally appropriate outreach and education effort to American Indian women in the Denver, Colorado area recruitment strategy. The program was evaluated according to increases in recruitment of women to mammography screening between 1995 and 1997.

The text is illustrated with a line graph to compare mainstream/ "Native Sisters" participation, and increases in Native participation during the period of observation. The results introduce responses to a 60-item questionnaire pertaining to age, income, family living, health insurance, previous history of having had a mammography, family and personal history of breast cancer, breast feeding, use of hormone replacement therapy, and menopause. Discussion touches on how participation in Breast Screening can be increased through outreach, and supports the value of lay health advisors. It describes successful/unsuccessful attempts to locate recruits, poverty barriers, the importance of recognizing the community structures and values, and the lifestyles of American Indians.

Chu, Kenneth C; Anderson, William F; Fritz, April; Ries, Lynn A. G; Brawley, Otis W
Frequency Distributions of Breast Cancer Characteristics Classified by Estrogen Receptor and Progesterone Receptor Status for Eight Racial/Ethnic Groups. Cancer 92:1 (July 1 2001)

Native Hawaiian, American Indians and Alaska Natives were among the racial/ethnic groups included in this National Cancer Institute examination of age at diagnosis, stage at diagnosis, histology grade, and tumor type in breast cancer since 1990. For Filipino, Chinese, and American Indians/Alaska Native (AI/AN) females, the tumor stages and grades differed. For Native Hawaiians, the histology tumor grades differed. Tables and text are presented to report: percentage distribution of tumors by Estrogen Receptor and Progesterone Receptor status, including unknown ER/PR tumors, for each racial/ethnic group; and tumor characteristics by racial/ethnic group and hormonal status. Charts indicate age frequency distributions by single year of age by the joint ER and PR status for each group.

Cobb, Nathaniel; Paisano, Roberta E
Patterns of Cancer Mortality Among Native Americans. Cancer 83:11 (Dec 1 1988) 2377-82

This study challenges the body of literature that surmises lower cancer incidence and mortality among American Indians than among other US racial groups. Dramatic increases in the number of cancer deaths during the preceding decade prompted this inquiry, which may serve to generate hypotheses about risks and causes for various types of cancer.

The authors set out to address racial misclassification and arrive at more accurate estimates of cancer mortality among this population by taking a sampling of reservation residents and using death certificates, excluding areas of known racial misclassification, and calculating age-adjusted mortality rates for specific types of cancer. Results were compared with US rates for all races. Statistics are illustrated in table and graphs.

Rates among male, and male and female Native Americans combined, were indeed found to be lower. However, American Indians and Alaska Native females were found to experience lower rates of death from carcinoma of the lung and breast, yet significantly higher rates than the general population from carcinoma of the cervix and gallbladder. American Indians and Alaska Native males had significantly lower rates of death from carcinoma of the lung, colon, and prostate, but significantly higher rates from that of the liver.

While both genders combined do experience lower rates of death from lung and colon carcinomas, they were found to have significantly higher rates of death from carcinomas of the stomach, liver, kidney and gallbladder. There were substantial differences in the findings from two distinct geographic, cultural and linguistic regions from the American southwest and northern plains.

Changes in culture, diet and lifestyle, smoking, income, environment, access to modern facilities, and genetics were all taken into consideration. Because unique patterns were found to exist among Native Americans, prevention and control programs geared specifically for this population were recommended. In addition, the study calls for a careful survey on cancer mortality among urban Indians.

Hampton, James W
Cancer Prevention and Control in American Indians/Alaska Natives. American Indian Culture and Research Journal 16:3 (1992) 41-50

The preamble for this article offers rationale for the growing concern over cancer among American Indians. In comparison to larger society, incidence of specific cancer in isolated regions appears disproportionate. Separate discussions are dedicated to cancers of the lung, uterine cervix, breast, biliary malignancies, gastric, colorectal, prostate and primary hepatic cancer among American Indians. Incidence, probable causes or contributing factors, prognosis for survival, and trends are described and compared with general US data. Rates, proportions and statistical information are provided in the text.

Specific cancer problems in Alaska Natives are described, based on information from two Alaska tumor registries, epidemiological studies, and statistics about socioeconomic status and tobacco use. In a discussion correlating cancer with specific tribes, higher incidence of lung cancer among the northern Plains tribes and Alaska Natives is attributed to excessive use of tobacco. For certain tribes living in different geographical areas, prevalence of cancer in specific sites has been observed, and the findings are summarized.

Kottke, Thomas E; Trapp, Mary Alice
Time Since Prior Testing and Quality of Pap Test Specimens Collected by Nurses Trained to Serve Native Populations. Cancer supplement 83:8 (Oct 15 1998) 1809-14

The educational program 'Nurses Providing Annual cancer Screening' (NPACS) was developed in the late 1990's to address escalated rates of cervical cancer and concern over breast cancer survival for Native American, Alaska Native and Pacific Island women. The departments of Medicine and Health Sciences Research at the Mayo clinic in Rochester, Minnesota collaborated in efforts toward early cancer prevention and control among women at particular risk.

A seven step process was developed to improve early detection, increase awareness of the risks, improve chances for survival, overcome cultural and communication barriers as well as barriers to optimal treatment. Nurses and all relevant clinic personnel were trained in recruitment, screening, and follow-up work to support clients in need of breast and cervical cancer screening services. NPACS nurses were trained to communicate effectively with the women they serve and to collect high quality Pap test specimens.

Evaluation was based on bringing women up to date on breast examination, mammography and Pap testing. All participating clinics kept records of the number of tests and quality of test specimens. The percentage of women who returned for screening within 1 year and 3 years increased dramatically by 1997.

Tables demonstrating training objectives for the nurses, time since previous Pap test, and proportion of satisfactory Pap test specimens collected are included. Evaluated successes among the trainees suggest expansion of the nursing role contributes to increased access of women to potentially life-saving cancer detection.

Mahoney, Martin C; Michalek, Arthur M
The Health Status of American Indians and Alaska Natives: 2. Lessons for Cancer Educators. Journal of Cancer Education 14:1 (1999) 23-7

Cancer has emerged as the third leading cause of death among American Indians and Alaska Natives (AI/AN) in the US, despite its noted rarity in this population in previous scientific publications. This article presents an overview of the epidemiology of cancer, highlighting studies and demographics on cancer incidence, mortality and survival rates for Native people. In comparison with other Americans, markedly different patterns for site-specific cancers are evident among this population. Tables are used to show overall incidence and mortality, and the leading cancer sites with documentation from 1988-92. Native people are found to have the poorest survival rates of any racial group for all cancer sites combined and for eight of the ten leading sites.

The article describes how cancer control research within Native communities has lagged behind research interventions conducted in the general population, prompting the 1990 formation of the Network for Cancer Control among American Indian and Alaska Native Populations. Since that time, a series of international Native American Cancer

Conferences (See Cancer supplement v78 (1996)), various opportunities to educate health care providers, enhancement of cultural sensitivity and screening/prevention initiatives have taken place through their National Strategic Cancer Plan and via a Strategic Plan for State Public Health Agencies.

Conclusions indicate that despite these efforts, "Cancer incidence rates are increasing among Native peoples." They have found that, "Now, nearly every Native family and community has had firsthand awareness of the suffering and death resultant from this disease." In the past 20 years, cancer mortality rates for AI/ANs have increased approximately 15%.

Attempts to address the increase of cancer incidence among Natives come in the forms of: smoking cessation programs, prevention programs, awareness of ceremonial vs. recreational tobacco use, community-based cancer education and detection programs, staff training, exercises in community acceptance, and awareness of the dramatic changes (in diet, environment, lifestyle, occupation and stresses of assimilation) that this particular population has undergone.

Mahoney, Martin C; Michalek, Arthur M
A Bibliometric Analysis of Cancer Among American Indians and Alaska Natives, 1966-1993. Alaska Medicine 37 (1995) 59-62, 77

This analysis assesses studies describing cancer among American Indians and Alaska Natives between 1966 and 1993. Searches in the MEDLINE, and CANCERLIT databases, and additional literature revealed that 128 studies had been reported during the time period. Some 62 were articles published after 1988, and over half of the total appeared in nine specific journals. Results revealed a lack of published information, and the need for more cancer research among American Indians and Alaska Natives.

Michalek, A. M; Mahoney, M. C
Provision of Cancer Control Services to Native Americans by State Health Departments. Roswell Park Cancer Institute, Buffalo, NY. Journal of Cancer Education 9:3 (Fall 1994) 145-7

Chronic disease directors in 50 states participated in this cross-sectional survey to determine the extent of cancer prevention and control programs for American Indian and Alaska Native (AI/AN) tribal groups who are supported by state public health agencies. Those from 16 states (32%) reported having programs specifically for AI/AN populations and only a few had culturally relevant cancer education materials for them.

Many of the directors were unfamiliar with cancer patterns or general health problems among AI/ANs. Cancer prevention and control services are, however, available to AI/ANs through most state public health agencies. Increased awareness of cancer as a health problem among AI/ANs and the expansion of services to them will result from the dissemination of these survey results.

Michielutte, R; Sharp, P. C; Dignan, M. B; Blinson, K
Cultural Issues in the Development of Cancer Control Programs for American Indian Populations. Department of Family and Community Medicine, Bowman Gray School of Medicine. Journal of Health Care for the Poor and Underserved 5:4 (1994) 280-96.

This article addresses cancer as the third leading cause of death among American Indians, emphasizing how cultural differences can determine success in efforts to develop effective control programs for prevention and early detection. It explores various beliefs, behaviors and values between cultures. Examples are given of culturally sensitive health education programs, featuring experiences from the North Carolina Native American Cervical Cancer Prevention Project. It concludes with recommendations for developing future programs.

Native American Cancer Initiatives-Denver Indian Centre.
Native American Breast Cancer Survivor's Stories - Series of Support Booklets. Morning Dew Computer Productions (Apr 17 1998)
Website order forms: http://members.aol.com/natamcan/booklets.htm
Phone: (303) 839-9359

This series is designed to provide culturally appropriate psycho-social breast cancer support resources for Native breast cancer clients. Features include quotations from survivors, whose experiences are now used in breast cancer education, Native American cancer support groups, for cancer research interventions, and for a cancer survivor's network. There are 6 booklets on: Breast Health Screening among Native Americans; Native American Breast Cancer survivors-Stories of our Symptoms; -Stories of our Personal Reactions to Our Breast Cancer Diagnosis; -Stories of Our Families' Reactions to Our Breast Cancer Diagnosis; -Stories of Our Breast Cancer Treatments; and -Outlook on Life. In addition, Alisa Rudolfo-Gilbert's journal is available.

Native American Cancer Initiatives-Denver Indian Centre.
Native American Breast Cancer Survivor's Stories--
Video Tapes. Morning Dew Computer Productions (May 17 1998)
Website order forms: http://members.aol.com/natamcan/videoamc.htm
Phone: (303) 893-9359

These videos focus on Native American breast cancer survivors from 27 different tribes. They can be used for cancer education or for survivor support groups (traditional healing circles). The set includes: Native American Breast Cancer Survivors-Stories of Prediagnosis; and –Personal and Family Reactions to Diagnosis; Breast Cancer Treatment; -Healing, Recovery, and Outlook on Life; -Alisa's Story; Native American Male Cancer Survivors; Overview of Native American Cancer Survivors—40 survivors of both sexes.

Nutting, Paul A; Freeman, William L; Risser, David R; Helgerson, Steven D; Paisano, Roberta; Hisnanick, John; Beaver, Shelli K; Peters, Irene; Carney, John P; Speers, Marjorie A
Cancer Incidence Among American Indians and Alaska Natives, 1980 through 1987. American Journal of Public Health 83:11 (Nov 1993) 1589-98

This report was based on the need for a more accurate understanding of cancer incidence among American Indians and Alaska Natives (AI/AN). Until 1980, scattered reports with data from specific communities led to the general belief that cancer incidence among this population was lower than overall US rates. Higher rates of certain cancer sites among AI/AN have prompted further inquiry.

Hospital discharge data, maintained by the Indian Health Service IHS, from nine major tribal groups was used to estimate rates by sex and cancer site. A base for studying variations in mortality and morbidity among different AI/AN populations was determined using a literature review of non-duplicated studies conducted after 1970. Estimations of incidence and the population at risk were made (tables included) and comparisons with Whites are shown.

Overall, male and female AI/AN cancer rates were significantly lower than those for US Whites. However, males experienced higher rates of morbidity for cancers of the nasopharynx, kidney, and gallbladder, and females had higher rates of stomach, gallbladder, and uterine cervix. Selected tribal groups displayed elevated rates for certain cancer sites, and these are discussed in detail and illustrated in table form.

Considerable, often dramatic, variation was observed among specific tribal groups for certain cancers, and this information is intended for use in planning. In comparison with other studies, the findings confirmed earlier observations of 16 cancer sites with standardized incidence ratios varying from US Whites. New observations were made, while reported earlier lower rates of some cancers were not confirmed.

Results underscore the dangers of generalizing health issues across many distinct AI/AN communities and tribal groups. The importance of acknowledging the diversity among AI/AN groups in efforts to target cancer control programs as a function of the epidemiology of preventable cancers became the ultimate message for this paper.

Nutting, Paul A; Calonge, Ned; Iverson, Donald C; Green, Larry A
The Danger of Applying Uniform Clinical Policies across Populations: The Case of Breast Cancer in American Indians. American Journal of Public Health 84:10 (Oct 1994) 1631-6

The cost and outcome implications faced by the Indian Health Service (IHS) were formally detailed to rationalize clinical policy for breast cancer screening among American Indians and Alaska Natives (AI/AN). In light of the high mortality rates due to breast cancer for this population, and evidence that diagnosis is occurring at a more

advanced stage of disease, the focus was on improving survival rates across a diverse set of communities with differing cancer experiences.

The analysis compared two strategies for controlling breast cancer by using decision trees (illustrated). The first entailed mobile mammography units for screening and clinical breast examination in women aged 50+. The second reflected existing IHS periodic clinical breast examination with diagnostic mammography for suspicious masses.

In a study community from the southwestern US, the strategies were compared over a 5 year period. Using various criteria, sensitivity of the outcomes applied (including costs) was examined, considering effect of the underlying incidence of disease in the population on outcomes of the decision analysis. Estimates of incidence rates, stage at diagnosis, and survival were calculated. Costs and assumptions used in the analysis were described, and specific figures are given.

When the outcomes were compared, the first option considered baseline breast cancer deaths and costs of care for patients in the absence of mammography, pointing to relatively few breast cancer deaths (1.85) in women aged 25 and over. Calculated results are described and illustrated in table form. For the annual screening mammography option, costs and effects of the strategy are summarized over age distribution, pointing to a 27.9% reduction in deaths over the first 5 years, but with a cost 3.6 times higher.

Program costs and outcomes for different incidence rates are shown to compare cost per death prevented by screening among Southwestern Indians (40-49), Southwestern Indians, Alaska Natives, and Southwestern Caucasians. The primary analysis favours annual screening mammography, even though the cost of care for cancer patients is relatively small in comparison to the cost of a screening program in many American Indian communities.

The study determined that cost and program outcomes are related to baseline incidence in the population. Of considerable policy importance is the discovery of striking trends in the range of incidence rates observed in American Indian women when using the baseline disease rates, stage at diagnosis, and stage-specific survival variables applied over each population. Hence, caution needs to be exercised when applying uniform clinical policies across populations.

The study concludes that greater impact can be achieved by addressing more common health problems than rare ones, and stresses the importance of targeting high-risk groups in populations with low baseline incidence (cases do exist, but are being caught at a later stage). Poor stage-specific survival emphasizes the importance of considering other intervention strategies for breast cancer mortality reduction among AI/AN. A combination of screening and case management tactics is recommended.

Olsen, S. J; Frank-Stromborg, Felicia; Fredericks, Larri; Rodriguez, Beverly
American Indian Women's Talking Circle – A Cervical Cancer Screening and Prevention Project. Cancer supplement 78:7 (Oct 1 1996) 1592-6

High mortality and low survival rates of cervical cancer among American Indian women prompted formation of a screening and prevention project in 1995. Documentation of high incidence and poor follow up care in this population suggested that higher risk for cervical cancer become a target for intervention. Efforts were made to tailor the message of cancer screening to suit the culture. With the high concentration of American Indians living in California, 400 Indian women, aged 18-77 years, from 4 rural and 4 urban clinic sites in northern California were recruited for this project. The aims were to increase positive awareness, participation (including postmenopausal women) and active follow-up for those with abnormal Pap examinations.

The research design entailed participation in intervention and control groups. Individuals in the intervention group completed a pretest, attended a series of 16 weekly talking circle sessions, and then completed a posttest. Those in the comparison group received booklets on smoking cessation and standard medical care, intervention materials related to cervical cancer, and one talking circle.

The project was designed to improve use of Pap smear screening already provided at the clinics. Talking Circles offered patient and community education and prevention measures as a culturally acceptable mode of supportive communication to facilitate long-term cancer screening. Along with prevention work, traditional story telling, myths and legends were part of the talking circles.

Focus groups were held before the talking circle phase to build an understanding of health care beliefs, behaviors and barriers to cervical cancer screening. The valuable cultural issues that arose are in these sessions are elaborated in the article. They include ideologies about traditional and medical health care, use of traditional healers and ceremonies, reluctance to the disease and to screening, experiences with patient/physician encounters, communication difficulties, and cultural differences. The survey instrument is described. At time of printing, final results were forthcoming. However, women were responding favourably to the culturally framed education project. Conclusions indicate the significance of change that can take place when culturally acceptable and sensitive intervention is offered. It is also concluded that this method has the potential to save lives and improve the health status of this population.

Olsen, S. J; Frank-Stromborg M
Cancer Prevention and Early Detection in Ethnically Diverse Populations. School of Nursing, U of Maryland, Baltimore MD. Seminars Oncology Nursing 9:3 (Aug 1993) 198-209

This article, addressed to clinicians and nurses, describes the challenge of providing cancer screening to the diverse minority subgroups in the US, which include Native

Americans, Native Alaskans and Native Hawaiians. Screening and prevention initiatives must be developed with ethnic, cultural, and accessibility considerations.

Roubideaux, Marilyn A; Kaur, Judith Salmon; Giroux, Jennifer
Mammographic Findings and Family History Risk for Breast Cancer in American Indian Women. Cancer supplement 83:8 (Oct 15 1998)

This short article provides facts about breast cancer among American Indian women, addressing low 5-year relative survival rates. It touches on variation in age adjusted cancer mortality among tribes, particularly citing elevated rates recorded in the Aberdeen area (North and South Dakota, Iowa and Nebraska), where screening rates have been low. Where incidence and mortality rates are low, cost-effectiveness for screening mammography is under question.

A retrospective review of mammograms and accompanying records from 1995-96 was done using information from a reservation-based cancer-screening clinic, a mobile van, and a fixed mammography unit in the Aberdeen area. Age, family history of breast cancer, mammographic abnormalities, density, and biopsy results were determined. Density results were compared with findings from non-Native women of Ann Arbor, Michigan.

From the Aberdeen women, over 10% of the mammography results were abnormal, and almost all of those were highly suspicious of cancer, and 10% had a positive family history of one or more first-degree relative. A table of results is included. The rates were found to be comparable to existing study results, and the article recommends screening mammography for early detection of breast cancer in American Indian women, especially for those under 50.

Schinke, S. P; Moncher, M. S; Singer, B. R.
Native American Youths and Cancer Risk Reduction - Effects of Software Intervention. Columbia University School of Social Work, New York, NY. Journal of Adolescent Health 2 (Mar 15 1994) 105-10

Aiming to create an attractive, effective means of reducing cancer risks faced by Native Americans, this study developed and tested interactive computer software to improve dietary choices and prevent tobacco use. A cancer prevention lesson was developed, programmed, and pre-/post-tested among 368 Native American youths divided into random intervention and control arms. Indicators and measurement variables covered information and attitudes about cancer risks from dietary practices and tobacco use. The results showed that interactive computer software holds promise for delivering cancer risk reduction and intervention for Native American youth.

Stovall, Christina E; Wright, Stephen A
Reaching African-American and Native-American Women – Evaluation of Local Breast Cancer Screening Initiatives. Cancer supplement 83:8 (Oct 15 1998) 1840-54

Services of the Texas Breast and Cervical Cancer Control Program (BCCCP) are described in this article, which focuses on the particular challenges faced by health care providers reach African-American and Native-American women. Efforts to increase service delivery to these populations included a short campaign on breast cancer screening and local clinical initiatives including breast cancer screening, tracking, diagnostic procedures, referral for treatment, and client education services. Partner organizations were located.

Low-income women were eligible to receive the services, and African-American and Native-American women were the priority populations. Participants completed a short survey, and service providers documented resources, causes of delays in delivering services, and issues, and suggested improvements. The BCCCP evaluated the number, race/ethnicity, and age of women served.

Outreach to Native American women was not successful. Negligible numbers of Native-American women were tested. Unexpected staff turnover in the contact service organization delayed screening. Instead of completing the paperwork, the organization paid for the screening. Another contact organization reported that their clients already had medical coverage.

The article closes with suggestions from the providers. Issues include: service enhancement, improved outreach/communication, funding for tasks and transportation, improved information to staff, time considerations for implementation and infrastructure development, knowledge of time and experience requirements for working with specific populations, strengthening ties with service organizations and regular communication with new providers. An effort to learn more about the priority population is required.

Thiemann, Kay
Native Women at Risk: Addressing Cancer Prevention. Winds of Change 9:3 (1994) 30-33

Representatives from various tribes, state health departments, the Indian Health Service, the Mayo Clinic, and the American Cancer Society gathered to address the high rate of cervical cancer among American Indians. Barriers to health care and plans to promote cancer screening are presented.

Wilcox, L. S; Mosher, W. D
Factors Associated with Obtaining Health Screening Among Women of Reproductive Age. Public Health Report 108:1 (1993) 78-86

In the 1988 National Survey of Family Growth, American Indian women, women not sexually active, those with little education or low income, Hispanics, and women of

Asian or Pacific Islander descent were found to have the lowest rates for breast, cervical cancer and hypertension screening, regardless of their risk status.

NORTH AMERICA

Mahoney, Martin C; Michalek, Arthur M
A Meta-Analysis of Cancer Incidence in United States and Canadian Native Populations. International Journal of Epidemiology 20:2 (1991) 323-7

The statistical technique of combining results from several studies was used arrive at a balance of quantitative and qualitative assessment for this summary of cancer incidence among Native people in the US and Canada. The aims were to identify and target cancer sites amenable to prevention and early detection and gain a greater understanding of cancer patterns in this population. Methods involved a literature review (1980+), use of the 'TRUE EPISTAT' statistical package, and a z-test to determine increased/decreased incidence.

For all sites combined, Native males and females showed a lower incidence of cancer. For males, cancer exhibited elevated incidence, while colon, lung, and prostate cancers, lymphomas and leukemias were all significantly lower. Females were found to have significantly elevated incidence of gallbladder, cervix and kidney cancers, and significantly decreased incidence of colon, breast, uterus cancers, as well as lymphomas.

Tables to demonstrate which published studies of cancer incidence among North Americans were used (overlap dates accounted for) and to summarize meta-analysis of cancer incidence among North American Natives (by cancer site, sex, study, combined z-score, p-value, test for heterogeneity, and conclusion). A bar graph is used to demonstrate the standardized incidence ratios (SIR) for the studies they used.

Discussion leads into specific attention to cancers of the kidney, gallbladder and cervix. It considers factors in the etiology of these specific sites, rationale for continuation of site-specific screening programs, study limitations, exposure to risks (sociocultural and/or environmental), limited number of studies available for inclusion and the use of meta-analysis to summarize patterns among Natives.

Native American Cancer Research
National Native American Cancer Survivors' Support Network. Promotional materials. (2001)
Website: http://members.aol.com/natamcan/network.htm Phone: (303) 839-9359

These materials describe the network and activities surrounding the Native American Cancer Research organization, whose mission is "To improve survival from cancer and the quality of life after a cancer diagnosis for American Indians, Alaska Natives, and Canadian Aboriginal cancer patients and their loved ones." Their resources address survivor support, connecting survivors, intimate issues, personal needs, support for loved ones, traditional healing, celebrating life, internet access, and survivor outreach training. Survivor advocates can be found in many states.

A Native American Cancer Survivors' conference was hosted in September 2001 in Scottsdale, Arizona. The organization aims "To reduce Native American incidence and mortality, and increase survival from cancer among Native Americans." Current initiatives include programs on the: National Native American Cancer Survivors' Support Network; Genetic Education for Native Americans; Increasing Mammography for Urban American Indian Women; Native American Cancer survivor Support Circles; The Native Circle (a partnership); Clinical Trials Education for Colorado Providers (a partnership); Clinical Trials Education for Native Americans (a partnership); The American Indian Alaska Native Cancer Initiative (a subcontract); Colon Cancer Screening Among High Risk Alaska Natives.

Seivers, M. L; Fisher, J. R
Cancer in North American Indians: Environment Versus Heredity. American Journal of Public Health 73:5 (May 1983) 485-6

The general picture of cancer incidence and mortality is deduced through findings from a number of cancer studies among American Indians, with references made for specific anatomic sites. Cigarette smoking habits and the findings connected to cancers among cultural groups are compared. The extent and distribution of cancer by site, ancestry, and sex are examined in terms of their implications regarding the relative influence of genetic and environmental factors.

The writers consider susceptibility to certain carcinogenic effects, uranium mining, degree of American Indian heritage, and rapid changes in environmental and cultural conditions as determinants for future trends. While epidemiological studies often suggest that environmental factors are the major contributors, they make recommendations for intervention based on their observation that for this particular population cancer appears to be more influenced by cultural conditions than by an inherited resistance or predisposition (even though hereditary influences do factor in).

INTERNATIONAL

Hart Hansen, J. P
Circumpolar Cancer – International Cooperation in Prevention and Control Programs. Arctic Medical Research. University of Manitoba Press. Circumpolar Health 90. Proceedings of the 8th International Congress on Circumpolar Health. Whitehorse, Yukon (May 20-25 1990) 440-2

Shaefer's 1974 description of cancer patterns among Canadian western arctic Inuit prompted epidemiological research and registration programs in Alaska, Canada, and Denmark/Greenland. International cooperation in circumpolar regions was needed due to small populations of Inuit living in different countries and rapid changes in living conditions and lifestyle for the Inuit. In 1981, an international working group on circumpolar cancer was formed.

The group has standardized cancer registration in the regions for etiological and analytical study purposes, and encouraged cancer control programs. Cervical carcinoma and primary liver cancer have been of particular concern. They aim to draw the attention of health professionals, administrators, politicians and lay people about the cancer pattern in this population. An international monograph on circumpolar cancer, including figures by country, was pending at time of printing

By 1987, concern over the rapid increase in lung cancer rates among the Inuit, who consumed world record levels of tobacco, was brought to the attention of the 7th International Congress on Circumpolar Health. Consequently, the group met to plan integrated/intersectoral action against tobacco use in the circumpolar regions.

A conference organized by the International Union for Circumpolar Health and the World Health Organization was held in 1989. Delegations from all of the countries attended. Native participants agreed on 12 recommendations toward an effective tobacco policy, which was written in the cultural context of the circumpolar regions. A follow-up meeting was held in Whitehorse, where some of the principles were adopted for use in AIDS prevention. Periodic surveying to monitor the effects of ongoing and new anti-tobacco activities in the circumpolar regions was planned.

Harvald, B
Fighting Cancer in Greenland: The Danish Cancer Society Strategies. Arctic Medical Research. University of Manitoba Press. Circumpolar Health 90. Proceedings of the 8th International Congress on Circumpolar Health. Whitehorse, Yukon (May 20-25 1990)

Since 1928, the Danish Cancer Society has worked to intervene where public health service lags. They aid in research, information, and support to patients. In Greenland, the yearly number of new cancer cases nearly tripled from 1955 to 1985. There was particular concern about the tripling of lung cancer incidence, and world high ratings of

cancer of the cervix uteri. Among natural causes of death, cancer rated number one in both men and women in Greenland.

The Danish Cancer Society targeted the trends by approaching the problem both scientifically and by mobilizing the local population in a fight against cancer. Epidemiological studies and preventive measures concerning cancer in this population have resulted. Local divisions of the Society formed in almost all Greenlandic municipalities, creating "Neriunneq," a Greenlandic Cancer Society, which has a seat on the Danish Cancer Society Board.

An anti-tobacco campaign and screening for cancer of the uterine cervix were the Greenlandic divisions' first two initiatives. Local divisions also work with the schools to deliver educational and informative programs, smoke-free pregnancy advertising, and they work to pressure local and state authorities. Their urgent concern is that high-risk groups are out of reach for cervical cancer screening.

Support to patients and their relatives is also offered. Inuit family bonds are strong, and patients from Greenland often experience loneliness while in Denmark for diagnostics and lengthy therapy. Special interpretation for Greenlandic cancer patients is offered as a supplement to the ordinary interpreter services they receive in the Danish hospitals. A Greenlandic nurse with oncological training is now employed by the Cancer Society to work with their patients.

Knudtson, Peter; Suzuki, David
Wisdom of the Elders. Stoddart Publishing Company, Toronto (1992)

Indigenous approaches to ecology and natural balance are gathered from a number of traditional societies from around the globe. In a chapter on the fate of the earth, the authors remain optimistic that the nature-wisdom of Native Elders may indeed hold viable cures for such diseases as cancer and AIDS. Among other themes, environmental efforts to benefit the planet will require equally respected parallel innovations from both traditional wisdom and modern science.

Lanier, Anne P; Mostow, Elliot N
Screening for Cancer in Remotely Populated Regions – Lessons from Mammography and Breast Cancer. Arctic Medical Research. University of Manitoba Press. Circumpolar Health 90. Proceedings of the 8th International Congress on Circumpolar Health. Whitehorse, Yukon (May 20-25 1990) 462-4

The Indian Health Service's Arctic Investigations Program of the Centers for Disease Control conducted this assessment of the costs and benefits of mammography for Eskimos, Aleuts and Indians living in Alaska. The Alaska Area Native Health Service (AANHF) provides clinical care to this Native population, which is distributed throughout 200 communities, where facilities lack X-ray and laboratory capability. While itinerant public health nurses and physicians visit the clinics, primary health care is administered by Community Health Aides.

While breast cancer ranked the second most frequently diagnosed cancer in Alaska Native women, and third most frequent cause of death, they were still at half the risk of US white women. The number of lives to be saved annually, after full implementation of a screening program for this population, was estimated at about one per year for the years between 1975 and 2005. Tables are provided.

Cost estimates for a statewide screening program were calculated under three scenarios. Possible occurrence of false positives and services surrounding them were factored in. Expenses for travel, personnel, equipment, quality control, and follow-up were all considered and weighed against apparent cost savings. The cost of the program would range from $1.5 to 3 million. Travel costs dominated.

An example from Seattle is given, where even without the travel costs, only a program that targeted high risk patients could be cost effective. Results from other logistical studies are cited. Despite the apparent conclusion that benefits of mammography do not appear to justify the costs, the impact a cancer death has on Native villagers and relatives is considered.

Creating opportunities to bring mammography in the Arctic to national 'standards' needs to be addressed. Since family history of breast cancer carries the highest known risk for breast cancer, one option would be to identify Native women at hereditary risk and offer mammography selectively for them. The recommended solution is to make screening services more readily available for women travelling to Anchorage.

Muir, Calum; Waterhouse, John; Mack, Tom; Powell, Jean; Whelan, Sharon (eds.)
Cancer Incidence in Five Continents – Volume V. World Health Organization - International Agency for Research on Cancer and International Association of Cancer Registries.
Available through Cancer Care Ontario, Department of Preventive Oncology Library
Phone: (416) 971-9800

In the context of international cancer incidence, the national cancer incidence reporting system for Cancer is described. While no specific mention of incidence among Aboriginal peoples is made, this volume provides the backdrop for how statistics for Canada compare internationally. It describes how the National Cancer Institute for Canada has arrived at its current National Cancer Incidence Reporting System, and provides the tables on statistics for average annual incidence for specific cancer site by age and sex.